

## CHAPTER 1

### INTRODUCTION

#### 1.1. BACKGROUND TO THE STUDY

In the late 1990s corporate chief executive officers (CEOs) saw their compensation increase approximately six-fold from prior years. This immense growth in CEO pay stemmed from the phenomenal rise in share option grants to top executives. (Morrissey, 2000:1.) Furthermore, the Economist (2002) reported that by 2001, share options accounted for 58% of the pay of chief executives of large American companies. In fact, Morrissey (2000:1) noted that in the United States, share options had become the preferred form of compensation for some non-managerial workers as well.

The reasoning behind granting share options was that they were thought to be the most effective tool of aligning top management's interests with those of shareholders. If the manager or employee had the option or right to purchase shares in his company at the exercise price, he would have an incentive to work harder in order to increase the share price of his company, thereby realising a profit for himself in that he would be able to exercise his options and purchase the shares at the lower exercise price. (Casey, 2002; FRA Investment Education Series, 2002.)

However, the above argument was masquerading the real reason for the unprecedented growth in employee share options (ESO) grants over the last decade. Most accounting standards around the world did not require companies to *recognise* an expense for ESOs granted (Cavallo, 2002; IASB, 2003:1). Only the dilution of earnings per share as a result of the future exercise of ESOs was to be *disclosed* in the notes to the financial statements (Maxim Integrated Products Inc, 2002:4). Furthermore, Towers Perrin (2002:1) stated that in the United States, companies were also allowed to claim a tax deduction for option holders' gains upon the exercise of their ESOs. Due to the abovementioned accounting loophole and favourable tax treatment, companies and chief executives capitalised on this so-called "free-lunch" leading to the unprecedented explosion in the granting of ESOs during the late 1990s.

However, the recent dot-com implosion and meltdowns at Enron, Global Crossing, Aldelphia and WorldCom in the USA and other companies around the world, revealed what many had forecasted: by not recognising ESOs as an expense, corporate earnings were being window-dressed and did not faithfully represent the financial results of companies (McGraw, 2002). In the light of the above, Rosen (2002c) raised the question as to whether share options do in fact align employee and shareholders' interests or whether they are just a way to disguise costs, provide excessive rewards to people already excessively rewarded and give CEOs a reason to manipulate earnings. In fact, Grant and Ciccotello (2002:37) felt that not accounting for ESOs is a serious problem for anyone who believes in the integrity of capital markets and the efficiency of capital allocation.

## 1.2. PROBLEM DEFINITION

The main problem which this dissertation intends to explore is how one accounts for outstanding ESOs in the financial statements. One of the most fundamental debates regarding the accounting for ESOs, is whether or not ESOs should actually be recognised at all in the financial statements. This debate has been in existence since the early 1960s when Campbell (1961:52) argued that ESOs should be expensed. Much controversy has ensued since then – not only regarding *whether* ESOs should be recognised or not – but also *how* and *when* they should be expensed. In fact, in the United States the heated debate that ensued following the publication of an exposure draft requiring US companies to expense ESOs, reached the President himself (Harlan, 1994:A7).

Questions in the employee share option accounting debate for which answers should be sought are:

1. Should ESOs be recognised at all in the financial statements?
2. At what value should ESOs be recognised in the financial statements?
3. At what date should ESOs be recognised in the financial statements?
4. Are outstanding ESOs equity or are they liabilities?
5. How should ESOs be allocated over the service period?

Most of the above questions remain unresolved and most accounting scholars will agree to disagree on many of the above issues. Much of the controversy relating to

ESOs stems from the fact that ESO terms and conditions differ substantially from normal traded options. Such differences affect, *inter alia*, the valuation and the accounting for ESOs. Perhaps it is fit to say that the problems raised regarding the accounting for ESOs attack the very foundations on which financial accounting is built. Despite the enormous academic research on ESOs, the schism between the various accounting opinions widens as more and more research is published on ESOs.

Other problems that this study intends to examine include how ESOs work, how they differ from normal traded options and the extent to which they are used as a compensation tool. Finally, one of the major issues which has been argued in the ESO debate is whether or not ESOs do in fact alleviate the moral hazard induced by external capital. Recent abuses with ESOs tend to dispel the notion that ESOs align management interests with that of the shareholder. Such discussion is an unsolved problem in the corporate finance literature which this study intends to briefly look into.

### 1.3. REASONS FOR THE RESEARCH

The accounting for ESOs is very topical in the light of almost every listed company having outstanding share options off balance sheet. Should they have to expense them and bring them onto the balance sheet, this will have a material effect on corporate profits, as brought about by academic research done internationally on this topic (Grant & Ciccotello, 2002:39). Hence, a critical analysis of the problems associated with accounting for ESOs is deemed necessary.

In the light of the fact that the King Committee's Second Report on Corporate Governance for South Africa (2002:para. 2.5) recommended share options to be granted to directors, it would seem that it is also important that ESOs should be accounted for correctly. This dissertation attempts to analyse the issues involved in accounting for ESOs.

Due to the Enron and WorldCom debacles in 2002, this topic has become relevant due to fraud and accounting manipulations involving ESOs. Users of financial statements are aware of potential "window-dressing items" which affect the financial statements. Investor confidence must be restored by being able to demonstrate that

all transactions can be accounted for correctly. This dissertation attempts to put the problems in accounting for ESOs in perspective, in a clear and unambiguous way.

Furthermore, in November 2002, the International Accounting Standards Board (IASB), which is based in the United Kingdom, was under pressure as to how the dilemma of accounting for ESOs was to be solved. The American accounting standard on ESOs only recommends, but does not require companies to recognise ESOs as an expense (Grant & Ciccotello, 2002:39). However, the IASB had no accounting standard at all dealing with ESOs. The IASB responded in kind to this serious lack of guidance by issuing ED 2 – *Share-based payment* on 7 November 2002. The South African version of the above exposure draft is ED 160 – *Share-based payment*. The issuance of the above exposure drafts has brought the debate surrounding the accounting for ESOs directly into the spotlight. This means that analysts, standard setters, financial directors, auditors and academics alike are concerned with the treatment of equity compensation benefits and the identification of various issues therein must be demonstrated in one clear and concise document.

Finally, the academic research carried out on this topic internationally is profound, yet locally, the research done on this topic is relatively small. It is therefore suggested that the accounting for ESOs is a highly specialised topic that needs the various aspects at hand to be compiled together to add value to the accounting profession in South Africa.

#### 1.4. RESEARCH OBJECTIVES

The primary research objectives are illustrated below:

1. To obtain an understanding of the mechanics and technical workings of ESO contracts.
2. To obtain an understanding as to the true economic nature of ESOs.
3. To explain the problems involved in accounting for ESOs. Such problems revolve around the following areas:
  - initial recognition and measurement of the ESO transaction
  - subsequent recognition and measurement of the ESO transaction
  - deferred tax

- disclosure
- 4. To analyse and critically evaluate the accounting proposals adopted by the Financial Accounting Standards Board (FASB) in the United States, the IASB and other accounting experts for solving the above problems.
- 5. To propose an optimal solution to the above dilemmas.

The secondary research objectives are as follows:

1. To investigate the proliferation and extent to which ESOs have been used as a compensation tool.
2. To discuss whether ESOs do in fact ameliorate the agency problem of external capital.

## **1.5. RESEARCH METHODOLOGY**

The research study is primarily a literature study, which is restricted to descriptive research, and as such a hypothesis is not to be set in this research study. The reason for using such approach is that the research conducted on ESOs is voluminous yet it is scattered over many sources. It was felt that it would be optimal to consolidate such research and accounting opinions on the subject of ESOs into one concise dissertation. This would optimise the accounting profession's analysis and evaluation of the accounting treatment of ESOs. The information for the literature study has been obtained mainly from:

- 1 Articles published on local and international Internet websites on the subject of accounting for ESOs.
- 2 Local and international articles on the subject published in accounting, finance and economics journals and other business publications and newspapers.
- 3 Accounting statements and exposure drafts issued by the Financial Accounting Standards Board (FASB), the International Accounting Standards Board (IASB) and other standard setting bodies around the world and the comments thereto.

## **1.6. SCOPE OF THE RESEARCH**

This research study is limited to a critical evaluation of the prevailing accounting treatment of ESOs proposed by the FASB, the setter of financial accounting standards for the United States, and the IASB, the setter of financial accounting

standards for the international community. Although the accounting proposals issued by the Accounting Standards Board (ASB) in the United Kingdom and the South African Institute of Chartered Accountants (SAICA) in South Africa are briefly explored in Chapter 3, only the standards issued and proposed by the FASB and the IASB are considered and analysed in detail in the research study.

Chapter 2 addresses the various ESO schemes and taxation thereof in the United States, the United Kingdom and the Republic of South Africa. However, this is meant to serve as a background so as to understand the materiality of share option schemes worldwide and is not a comprehensive exposition of such schemes and the taxation thereof. In addition, the chapter briefly explores whether or not ESOs resolve the agency problem. Due to the technical nature and advanced mathematics associated with this debate, only the conclusions drawn by the various authors on this subject are considered.

The study briefly describes the technical workings of traded share options and warrants. A full exposition of the intricate workings of traded options, the risks inherent in trading in options and warrants and investment strategies to deal with such risks fall beyond the ambit of this study. Furthermore, in order to value ESOs, one needs to apply an adapted option-pricing model. Although various option-pricing models are considered, a technical mathematical explanation and analysis of such models falls outside the scope of this study.

Equity-based compensation encompasses a wide variety of share-based payments. For the purposes of this study, attention is focused solely on share options granted to the employees of the organisation and the accounting for other types of share-based payment contracts is not dealt with in detail in the study. However, because some of the accounting standards analysed in this study compare the accounting treatment of certain instruments to that of ESOs, where applicable, such accounting aspects are dealt with in this study. Furthermore, the focus of the dissertation intends to be on the accounting for share options issued to employees and not share options issued to non-employees.

Although the dissertation discusses the accounting for certain exotic features in ESO plans, it by no means covers the accounting treatment for every aspect and every

possible type of employee share option plan. Only the issues raised by the various accounting standards analysed in this study are discussed.

Although the study briefly discusses diluted earnings per share with reference to ESOs, a detailed examination of earnings per share and its dilutive effects, falls beyond the scope of this study.

An in-depth study of the debacles at Enron and WorldCom and other corporate failures of 2002, falls beyond the scope of the dissertation.

Finally, it is not intended that this dissertation be an in-depth criticism of ED 2. Rather the dissertation presents ED 2 as a viewpoint and considers all the other accounting standards on the same standing. It is intended that the dissertation present the topic more laterally by considering the viewpoints of the other standard setting bodies, academics, and accountants alike.

## **1.7. STRUCTURE OF THE STUDY**

This study comprises six chapters. It is organised in such a way that most of the chapters retain an independent character. Since the literature review for the various sections differs, it was considered to be beneficial for the overall readability to group the work into self-contained chapters. A certain amount of repetition may occur for the benefit of continuity and coherence.

### **Chapter 1: Introduction**

In this chapter, the background to the study is described. The definition of the problem is given, the importance of the research is emphasised and the research objectives are given. The research methodology is given and the scope of the study is demarcated.

### **Chapter 2: Theoretical framework**

The theoretical background within which the problem of accounting for ESOs can be critically evaluated is formed in this chapter. The principal-agent problem of external capital is described, including a review of empirical findings of how equity-based compensation alleviates the principal agent problem. In the discussion on the

theoretical framework, the workings of option contracts in general and employee share options in particular is examined. This is followed by an examination of the various option schemes available in the United States of America, the United Kingdom and the Republic of South Africa. The chapter concludes with a discussion of whether or not ESO grants do in fact alleviate the moral hazard of external capital and thereby improve corporate performance.

### **Chapter 3: Accounting development and the expensing debate**

In this chapter the development of accounting for ESOs in the United States, the United Kingdom and the Republic of South Africa is described. It is demonstrated that generally, accounting standards have not mandated the expensing of ESOs in the financial statements. The abuse of ESOs due to the non-expensing thereof is shown. The chapter then explores in detail the various arguments put forth by the opposers of expensing ESOs and the supporters of expensing ESOs.

### **Chapter 4: Measurement and recognition of employee share options**

The various factors affecting the valuation of a traded share option are considered in this chapter. In addition, a brief review of the two most famous equilibrium option-pricing models is presented. The possible measurement methods for valuing ESOs are then examined. Thereafter, the various option-pricing models developed specifically for ESOs are summarised, together with an explanation of the differences between traded options and ESOs. The various possible measurement dates for accounting for ESOs are then evaluated. The economic nature of outstanding ESOs is assessed as to whether they are liabilities or equity in terms of the FASB and the IASB Accounting Frameworks. Finally, the different methods of accounting for the issue and settlement of plain vanilla ESO plans are described.

### **Chapter 5: Further accounting aspects of employee share options**

This chapter analyses the more complex aspects of ESOs, namely: ESOs with cash-settlement alternatives, ESOs with a reload feature, and the repricing consequences of ESOs. The various accounting possibilities for such features are examined. The deferred tax consequences arising from ESO contracts are explained. Finally, a suggested disclosure model for ESOs is provided at the end of the chapter.



## Chapter 6: Summary and conclusions

The preceding chapters are summarised and the conclusions as well as the recommendations of this study are presented in this chapter. Suggested areas of future research are proposed at the conclusion of this chapter.

### 1.8. TERMINOLOGY AND ABBREVIATIONS USED

The terminology used in this study mainly follows that used by the IASB in its accounting standards. The colloquial and/or American equivalents of such terms are summarised below:

	<b>Terms used in this study</b>	<b>Alternative terminology</b>
1	Accumulated profit	Retained earnings, retained income
2	Carrying amount	Book value or reported amounts in the financial statements
3	Compensation	Salaries, wages, remuneration, service costs
4	Expiry date	Expiration date
5	Issued share capital	- Additional paid in capital - Outstanding common stock
6	Mark-to-market	Revalued, remeasured
7	Outstanding options	Options granted
8	Reload feature	Top-up feature
9	Share market	Stock market
10	Share options	Stock options
11	Statement of changes in equity	- Statement of recognised gains and losses - Statement of shareholders' investment
12	Trued up	Reconciled

The following terms are used interchangeably in the text:

- “Employee”, “executive”, “director” and “management”.

- “Employer”, “entity”, “company” and “firm”.
- “Equity” and “shares”.
- “Non-vested options” and “unvested options”.
- “Option scheme” and “option plan”.

The terms “exercise price” and “strike price” are equivalent terms, yet the term “exercise price” is used when referring to employee share options whereas the term “strike price” is used when referring to other types of options like normal traded share options.

Unless stated otherwise, where the text makes reference to the term “accounting standards” or “accounting statements”, it encompasses both accounting standards and statements as well as exposure drafts issued by the relevant accounting standard setting authority.

The following abbreviations are used with their meanings specified:

<b>AICPA:</b>	American Institute of Certified Public Accountants
<b>AMT:</b>	Alternative Minimum Tax
<b>APB:</b>	Accounting Principles Board
<b>ASB:</b>	Accounting Standards Board
<b>CEO:</b>	Chief Executive Officer
<b>Cr:</b>	Credit
<b>CSOP:</b>	Company Share Option Plan
<b>Dr:</b>	Debit
<b>ED:</b>	Exposure draft
<b>EMI:</b>	Enterprise Management Incentive
<b>EPS:</b>	Earnings per share
<b>EESOC:</b>	European Employee Stock Options Coalition
<b>ESO:</b>	Employee share option. (The term “executive share (or stock) options” is also used in the literature.)
<b>ESOP:</b>	Employee Share Ownership Plan. (The term “Employee Stock Ownership Plan” is also used in the literature.)
<b>FASB:</b>	Financial Accounting Standards Board
<b>FTSE:</b>	Financial Times Stock Exchange

<b>GAAP:</b>	Generally Accepted Accounting Practice (The term “Generally Accepted Accounting Principles” is also used in overseas accounting standards.)
<b>IAS:</b>	International Accounting Standard
<b>IASB:</b>	International Accounting Standards Board
<b>IASC:</b>	International Accounting Standards Committee. (This was the name of the International Accounting Standards Board until 31 March 2001.)
<b>IPO:</b>	Initial Public Offering
<b>IRC:</b>	Internal Revenue Code
<b>ISO:</b>	Incentive Stock Option
<b>JSE:</b>	JSE Securities Exchange
<b>LIFFE:</b>	London International Financial Futures Exchange
<b>NCEO:</b>	National Center for Employee Ownership
<b>NIC:</b>	National Insurance Contributions
<b>NQSO:</b>	Nonqualified Stock Option
<b>OTC:</b>	Over-the-counter
<b>Para:</b>	Paragraph
<b>SAICA:</b>	South African Institute of Chartered Accountants
<b>SAYE:</b>	Save As You Earn
<b>SEC:</b>	Securities and Exchange Commission
<b>SFAS:</b>	Statement of Financial Accounting Standards
<b>UITF:</b>	Urgent Issues Task Force
<b>UK:</b>	United Kingdom
<b>US:</b>	United States
<b>USA:</b>	United States of America

## 1.9. Referencing

Because of the international harmonisation project of the SAICA and the similarities of the South African version of accounting standards with those issued by the IASB, references in the text are made to the international version of the relevant accounting standard issued by the IASB and not the South African version of the accounting standard issued by the SAICA.

The dates used to reference accounting standards are as follows:

- If certain paragraphs to the accounting standard were revised but the original name of the accounting standard was kept, the original issue date of such accounting standard is used as the reference date in the text of the dissertation and such issue date as well as the date at which the latest revision to the statement occurred, are both given in the bibliography to the text.
- If the accounting standard was completely revised and reissued under a new name, the date on which the accounting standard was reissued in its revised form is the reference date used in the text of the dissertation. The bibliography refers to this date as the “issue date” and the date at which the latest revisions to the statement were made is referred to as the “revised date” in the bibliography.

The IASC’s name changed to IASB on 1 April 2001. In this dissertation, accounting standards issued before 1 April 2001, while the Board’s name was still “IASC”, are referenced using this name and statements issued after this date are referenced using its new name “IASB”. The standards issued by the IASB are collectively called International Financial Reporting Standards (IFRS) whereas the standards issued by the IASC were called International Accounting Standards (IAS). For convenience, in this text the term “IAS” refers to both IASs issued by the IASC and IFRSs issued by the IASB.

For articles downloaded from the Internet, reference in the body of the text of the dissertation is made to an article’s page numbers only where the article was published in Adobe® Portable Document Format (PDF) **and** page numbers were given on the printed version of the relevant PDF article.

When the FASB issues exposure drafts, they have two potential references that can be used:

- the FASB ordering department’s reference number which appears on-line at the address <http://store.yahoo.com/fasbpubs/publications-exposure-drafts.html>.
- the FASB’s file reference number which appears on the front page of the relevant exposure draft.

In this study, for ease of use, abbreviated references for exposure drafts issued by the FASB refer to the FASB’s ordering department’s number.

## CHAPTER 2

### THEORETICAL FRAMEWORK

#### 2.1. INTRODUCTION

As stated by Van der Merwe (1996:13), any study of an accounting problem cannot be attempted unless it is done within the confinements of a sound theoretical framework. To be able to attain an understanding as to the true nature of the accounting treatment of employee share options (ESOs), it is first necessary to understand what equity-based compensation is and why it has been used as a method of compensating employees and management.

This chapter delves into the above issues as well as the workings of option contracts in general and share options in particular. The mechanics of ESOs are then explored. Thereafter the chapter looks at the origins of employee share options in various countries as well as the taxation and legal implications of employing such schemes in certain countries. Finally, an examination of the debate as to whether ESOs do in fact act as a motivational investment is considered.

#### 2.2. THE PRINCIPAL-AGENT PROBLEM OF EXTERNAL CAPITAL

In their pioneering work in 1932, Berle and Means explored the effects that the “modern corporation” would have on economic activity. These authors were witnessing the evolution of the corporate device from a private or “close” corporation to the so-called “quasi-public” corporation. The typical business unit of the 19<sup>th</sup> century was owned by individuals or small groups, was managed by them and was limited in size by the personal wealth of the individuals in control. However, Berle and Means (1932:2) described the quasi-public corporation as being

“a means whereby the wealth of numerable individuals has been concentrated into huge aggregates whereby control over this wealth has been surrendered to a unified direction. The power attendant upon such concentration has brought about princes of industry, whose position in the community is yet to be defined”. (Berle & Means, 1932:2.)

These “princes of industry” are the directors or managers of a company who have been given the mandate and have a fiduciary duty to manage shareholders’ funds in

order to give them a return on their investment (Cilliers, Benade, Henning, Du Plessis, Delport, De Koker & Pretorius, 2000:139). In their seminal corporate finance paper, Jensen and Meckling (1976:308) defined a principal-agent relationship as “a contract under which one or more persons (the principal(s)) engage another person (agent) to perform some service on their behalf which involves delegating some decision making authority to the agent”. Economic theory suggests that if both parties to a principal-agent relationship are utility maximisers, the agent will not always act in the best interest of the principal. This conflict of interest is known in the corporate finance literature as the *principal-agent problem of external capital, the agency problem* or the *moral hazard*. Since the relationship between shareholders (the principal) and the directors of companies (agents) fits the above definition, the modern corporation with its separation of ownership and control – more precisely, the separation of residual risk bearing from decision functions – would be intimately associated with the agency problem. (Jensen & Meckling, 1976:308-309.)

Accordingly, Berle and Means (1932:9) were very negative about the future of the modern corporation and stated that, “the explosion of the atom of property would destroy the basis of the old assumption that the quest for profits will spur the owner of industrial property to its effective use”. History has proven these authors correct. To cite two examples, as early as 1900 and 1915 various railway companies in the United States went into liquidation as a result of financial mismanagement by the directors (Berle & Means, 1932:122-123). And more recently, greed and corruption by the directors, caused the implosion of Enron Corporation, the multibillion energy giant in the United States, which has since shaken the total moral fibre of the modern corporation and capitalism in general (Thomas, 2002:41).

According to Holmström (1979:74), the source of the moral hazard is due to the asymmetry of information between directors (management) and the shareholders, since the actions of directors as well as investment opportunities available to them cannot be fully observed by the shareholders. Holmström (1979:74) suggested that the principal can limit the divergences of his interest by establishing appropriate incentives for the agent and by incurring *monitoring costs* designed to limit any dysfunctional behaviour of the agent. In addition, the principal will need to expend economic resources, which can be pecuniary as well as non-pecuniary (known as *bonding costs*), to ensure that the agent will not take actions which will harm the

principal (Jensen & Meckling, 1976:308). Therefore, in the case of the shareholders and directors, remuneration or compensation is paid to the directors and an annual audit is conducted in an attempt to alleviate the moral hazard. However, Jensen and Meckling (1976:308) referred to a further cost known as the *residual loss*, which is the loss incurred by the principal because the cost of full enforcement of contracts of employment exceed the benefits. All such costs connected to an agency principal relationship are collectively referred to as *agency costs* (Jensen & Meckling, 1976:308). In a later corporate finance paper, Fama and Jensen (1983:332) concluded that agency costs are part of the price that shareholders of public companies must pay for the benefits of unrestricted residual claims to net assets.

Jensen and Meckling (1976:312-313) proved that, in the absence of monitoring costs and other perquisites, as the owner-manager sells equity claims on his 100% owned corporation, agency costs will be generated by the divergence between his interest and those of the outside shareholders, since he will then bear only a fraction of the costs of any non-pecuniary benefits he takes in maximising his own utility. Similarly, as the owner-manager's fraction of the equity falls, his fractional claim on the outcome of the firm falls which will tend to encourage him to appropriate larger amounts of corporate resources in the form of perquisites (Jensen & Meckling 1976:312-313). By corollary, it could be concluded from the above paper, that as and when equity is transferred to directors or management, so does the agency conflict tend to be alleviated accordingly.

### **2.3. RESOLVING THE PRINCIPAL-AGENT PROBLEM USING EQUITY-BASED COMPENSATION**

Agency theory suggests that compensation policy should be designed in such a way as to provide management with incentives to select and implement actions that increase shareholder wealth (Jensen & Murphy, 1990b:226). From the conclusion in paragraph 2.2 above, it would seem plausible to conclude that by allowing executives to participate in the shares of the organisation, this can improve the alignment of management and shareholders' interests and therefore reduce agency costs. Many authors (Ross, Westerfield, Jordan & Firer, 2001:9; Gitman, 2000:17; Fama & Jensen, 1983:330-331) state that the goal of the firm is to maximise the current value per share of the existing shares of a company. If management achieves a

maximisation of the share price, the management and the company would have achieved their respective goals. Therefore, in an attempt to reduce agency costs and align corporate interests with that of management's interest, it was proposed that management participate in the equity or shares of the organisation (Brickley, Bhagat & Lease, 1985:115). Management would then have a significant economic incentive to increase shareholder value as this would mean greater value for themselves (Ross *et al.*, 2001:13).

Therefore, equity-based compensation has become an increasingly important element of executive compensation packages worldwide. Henderson (2001b:17) observed that 20 years ago, the average executive's pay package would be made up almost entirely of cash and a few fringe benefits. However, at the beginning of the 21<sup>st</sup> century, such pay package would be split among base salary, annual incentive and long-term incentives (usually in the form of share awards of some kind or another) (Henderson, 2001b:17). As Van der Kooy (2001:75) pointed out, shareholders are increasingly demanding pay schemes that are linked to performance. He stated that there is a strong move towards functionality: payment for what the director achieves and contributes. He predicted that in the future, executives will get a fixed payment for the position they fill and their performance will determine the variable portion of their earnings. (Van der Kooy, 2001:74-75.) Performance-based compensation is stressed as one of the requirements for good governance worldwide. The King Report on Corporate Governance for South Africa states as follows:

“performance-related elements of remuneration should constitute a substantial portion of the total remuneration package of executives in order to align their interests with those of the shareowners, and should be designed to provide incentives to perform to the highest operational standards” (King Committee on Corporate Governance, 2002:para. 2.5.5).

Therefore, by allowing executives to participate in the shares of the organisation, management in turn share in the risks and rewards of the company, which achieves the objectives of performance-related pay and reduces agency costs. This is supported by numerous economic models (e.g. Holmström, 1979:74-91; Jensen & Meckling, 1976:305-360; Beck & Zorn, 1982:1151-1167). Indeed, both Henderson (2001b:17) and Harlan (1994:A7) found that shareholders have a willingness to share



their wealth with management and that they do not mind large compensation packages as long as they are linked to performance.

Although management are the controlling body of day-to-day corporate affairs at a company, many companies realised that their ordinary employees were also key assets to the organisation and should also participate in the equity of the company for whom they work. The Employee Ownership Organisation ([S.a.]) based in the United Kingdom, observed that employees are one of the many stakeholders in an organisation and companies must work with their stakeholders over a long time to ensure business success. It further stated that one of the ways of promoting a long lasting relationship with management and other employees is through the incentivisation of employees through shareholdings in the company, known as *employee share ownership plans, share incentive schemes or equity-based compensation schemes* (Employee Ownership organisation, [S.a.]). Bussin and Thomson (2000) felt that employee share participation is part of the so-called “participative management movement” in which employees and management work together resulting in employees perceiving that by working harder, additional rewards will flow to them. This was also emphasised by Ormiston (1990:1-2).

The ESOP Association of Canada (2003) commented that the key aspect of employee share ownership boils down to the fact that employees have an ownership stake in the company they work for and therefore are directly exposed to the risks and rewards accruing to it. PricewaterhouseCoopers ([S.a.]) suggested that share-based incentive schemes motivate employees, which increases their commitment and throughput, focuses employees to direct their attention and efforts to deliver organisation success and improves the retention and recruitment of high calibre employees.

#### **2.4. EMPIRICAL EVIDENCE SUPPORTING THE USE OF EQUITY-BASED COMPENSATION AS A MEANS OF REMUNERATION**

Empirical evidence is available which supports the view that employee and executive share ownership improves corporate performance. The ESOP Association of Canada (2003) cited a study in Canada done by the Toronto Stock Exchange, comparing

Employee Share (or Stock) Ownership Plan (ESOP) versus non-ESOP public companies and found the following for ESOP companies:

- Five-year profit growth was 123% higher.
- Net profit margin was 95% higher.
- Productivity measured by revenue per employee was 24% higher.
- Return on average total equity was 92.3% higher.
- Return on capital was 65.5% higher.

(ESOP Association of Canada, 2003.)

Furthermore, the BCS Partnership (2002) observed that £100 invested five years ago in companies where the employees held 10% or more of the shares would be worth over £150 today. Invested in the Financial Times Stock Exchange (FTSE) All-Share Index, the money would have been worth only £120. The following comparative returns were also observed:

	<b>UK Employee Ownership Index</b>	<b>FTSE All-Share Index</b>
10 years	400%	200%
5 years	157.2%	120.7%

The BCS Partnership (2002) reiterated the point that employee share ownership improves profits as it reduces labour turnover, recruits better quality staff, saves payroll costs and cash flow, incentivises and rewards employees and promotes the acceptance of change.

The National Center for Employee Ownership (NCEO) is a private non-profit membership and research organisation based in the United States that serves as the leading source of accurate, unbiased information on ESOPs, broadly granted employee share options and related programs, and ownership culture. In fact, Inc. Magazine was quoted as saying that the NCEO is “the single best source of information on employee ownership anywhere in the world”. (NCEO, 2003.) The NCEO (2002a) cited a 2000 study by Joseph Blasi and Douglas Kruse at Rutgers University who found that ESOP companies in the United States grew 2.3% to 2.4% faster in revenue, employment, and revenue per employee. The study looked at all ESOP plans set up in the United States between 1988 and 1994 for which data was available. A 1987 NCEO study in the United States of 45 ESOP and 225 non-ESOP

companies found that companies that combined employee ownership with a participative management style grew 8% to 11% per year faster than they would otherwise have been expected to grow based on how they had performed before these plans were introduced. Subsequent studies by the General Accounting Office and by academics in Washington State and New York found the same relationship. A 1999 study for Hewitt Associates by Hamid Mehran of Northwestern University found that the return on assets for 382 US public companies with ESOPs was 2.7% per year higher than what a model of their predicted performance would have been without such ESOPs. (NCEO, 2002a.) Similarly, both Rodgers (2003) and Johanson (1999) concluded that employee ownership motivates employees and improves profitability and shareholder value over the long-term.

## **2.5. EMPLOYEE SHARE OPTIONS AS A FORM OF EQUITY-BASED COMPENSATION**

The term “equity-based compensation” is a wide term which embraces the compensation of an employee in shares, share options, share appreciation rights and other share-related awards. Since the focus of this study is on employee share options, only employee share options and employee share option schemes are dealt with further in this study. In order to fully appreciate share options as a form of compensation, it is first necessary to explore the nature of an option contract in general, a normal traded share option contract and finally an employee share option. For the moment, it will suffice to say that employee share options have become an important part of executive and employee compensation in First World countries. The most cited reason for the introduction of share options is the alignment of management, shareholder and employee interests. Although empirical evidence exists that employee share *ownership* does maximise shareholder wealth, the question of whether or not share *options* do in fact maximise shareholder wealth is an unsolved problem, which is dealt with at the end of this chapter in paragraph 2.12.

## **2.6. THE MECHANICS OF OPTION CONTRACTS**

### **2.6.1. Legal status of the option contract**

In South African common law, one of the requirements for a valid legal contract is that there must be *consensus* between the parties to a contract. The reaching of

consensus requires that each party makes his intention known to the other party. This is usually done through the process of *offer* and *acceptance*. An offer is a declaration made by a person (known as the *offeror*) in which he indicates his intention to be contractually bound, and in which he sets out the rights and duties he wishes to create. An acceptance is a declaration by the offeree through which he indicates that he agrees to the terms of the offer as expounded by the offeror. Apart from other legal requirements, the acceptance of the offer by the offeree usually creates a valid legally enforceable contract. (Havenga, Havenga, Christianson, Garbers, Meiring, Schulze, Van der Linde & Van der Merwe, 1997:43 & 46.)

In South African common law, an *option* is an offer granted by the offeror to establish the continued existence of the original offer in a contract, which is known as the *substantive offer*. Therefore, the offeror to a contract may make a substantive offer to the offeree to enter into a particular contract (for example a contract of sale) and in addition he may make a further offer (called the *option*) to keep open the substantive offer for a specified period. If the offeree accepts the second offer (i.e. the option), a contract known as an *option contract* comes into being. This option contract makes the offeror bound to keep open the substantive offer for the agreed period of time. Thus, for the duration of the option contract, the offeror (or option-giver or option writer) may not revoke the substantive offer. Should the option holder decide to accept the substantive offer (called *exercising* his option), the underlying contract will come into being in accordance with the terms and conditions contained in the substantive offer. Should he not exercise his option, the underlying contract will be null and void. (Havenga *et al.*, 1997:49.)

For example, A offers to sell his horse to B for a certain price. B is unsure of whether or not he should purchase the horse now. A then offers B the option to purchase the horse in two weeks time in exchange for a fee. In this case, there are two offers, namely the substantive offer (right to purchase the horse for a certain price) and the option (right to keep the substantive offer open for two weeks). Should B accept the second offer (i.e. he accepts the option), B will pay A a fee and the option contract comes into being. Such contract allows B two weeks to decide whether or not he wishes to accept the substantive offer. A, on the other hand, may neither offer the horse to someone else nor may he accept another's offer in respect of the horse until this period has elapsed or until B has rejected the substantive offer. The option is

exercised if B accepts the offer in terms of the contract of sale (substantive offer) within this period and communicates his acceptance to A. The exercise of the option by B, makes the underlying sales contract come into being. Otherwise, if B does not exercise his option, no underlying sales contract comes into being between the two parties and the substantive offer simply falls away. (Havenga *et al.*, 1997:49.)

## 2.6.2. Option contracts as financial instruments

As would be expected, the legal ramifications of options filter through into the financial world. In fact, Levinson (1999:190-191) noted that options and other derivative contracts have been used in commerce as financial instruments for thousands of years and were used by Thales, an Ancient Greek philosopher. Today, there are two basic types of options, namely *call options* (or simply called “calls”) and *put options* (or simply called “puts”). A call option gives the holder the right, but not the obligation, to **buy** an asset at a pre-agreed price on or before a given date. A put option gives the holder the right, but not the obligation, to **sell** an asset at a pre-agreed price on or before a given date. The pre-agreed price in the contract is known as the *exercise price* or *strike price*; the future date is known as the *expiry date*, *expiration date*, or *maturity date* and the asset is known as the *underlying asset* or the *underlying*. (Hull, 2002:4 & 160; Ross *et al.*, 2001:625.) The date on which the option is exercised is known as the *exercise date* and the amount of time until the expiry date of the option is known as the *option term*. A *European option* is an option that can only be exercised on the expiry date whereas an *American option* can be exercised at any date until the expiry date (Hull, 2002:4-5 & 160). Most option contracts require that the buyer or *holder* pay for this right. This payment to the option seller or writer is known as an *option premium*, which is determined by market forces and is equivalent to the option’s value or price. (LIFFE, [S.a.]a.) In addition, if options are traded through brokers, transaction costs are usually incurred when purchasing and selling options (Hull, 2002:172).

### 2.6.2.1. Call options

As mentioned above, a *call option* gives the buyer or option holder the right but not the obligation to **buy** the *underlying asset* at the strike price on or before the expiry date. The buyer or holder of a call option is said to be *going long* whereas the seller

or writer of the call option is said to be *going short* (Hull, 2002:6). In simple terms, a call option derives its value from the fact that the holder thereof has the right to purchase the underlying asset at a discount to the market. It is similar to a discount coupon a consumer gets in the supermarket. With a discount coupon, the consumer is able to purchase an item off the shelf for less than the shelf price. Similarly, a call option gives the holder the right, but not the obligation, to purchase the underlying asset at the strike price instead of the prevailing market price. It is this “discount”, being the difference between the prevailing market price of the underlying asset and the strike price of the call option, which creates value for the option holder. The reason is that, at exercise date, the option holder can use the option as legal tender to acquire the underlying asset at the strike price instead of the prevailing market price.

Therefore, one of the main determinants of a call option’s value is its *intrinsic value* (or its bargain potential). The intrinsic value of an option is defined as the maximum of the value that the option would have if it were *exercised immediately* (i.e. the difference between the current market price of the underlying asset and the strike price) and zero. If the option has a positive intrinsic value, whereby the current market price of the underlying asset is greater than the strike price (known as an *in-the-money option*), the call option has value. The reason is that if the option holder could exercise his option immediately, the option *entitles* him to purchase the underlying asset at the cheaper strike price rather than the prevailing market price. Ignoring transaction costs, he could then immediately sell the asset at the market price thereby realising a *cash inflow* and a profit equal to the option’s intrinsic value. Using the same logic, if the option has a zero intrinsic value in that the current market price of the underlying asset is equal to the strike price (known as an *at-the-money option*), the call option would *create* a zero cash inflow if exercised immediately, ignoring transaction costs. (Ross *et al.*, 2001:626; Hull, 2002:167-168.)

However, should the market price of the underlying asset fall below the strike price (known as an *out-of-the-money option* or an *underwater option*), the intrinsic value of the option would be limited to zero. The reason is that immediate exercise of an out-of-the-money call option would attract a *cash outflow*. This is because the option holder would need to purchase the underlying asset at the more expensive strike price and he would receive the lower market price as sales proceeds upon the sale of

the asset. Because the option holder has the choice or option of whether or not to exercise his option, the option holder would clearly not exercise an out-of-the-money option and he would let it lapse unexercised, creating a zero cash outflow, ignoring transaction costs. (Ross *et al.*, 2001:626; Hull, 2002:167-168.) Therefore, at-the-money and out-of-the-money options do not attract much value, since their intrinsic values are zero. However, this does not necessarily mean that the *total value* of such options is zero. As explained in Chapter 4 (para. 4.3.3), the *total value* of an option is a function of its intrinsic value plus its time value (Hull, 2002:168).

Consequently, from the call option holder's perspective, an increase in the market price of the underlying asset of an at-the-money or in-the-money call option *increases* the option's value up until the earlier of the exercise date or the expiry date of the option. The reason is that the call option now gives him the *right* to purchase the underlying asset at the strike price and to sell the asset at an even higher market price and enjoy a greater profit. The profit potential of a call option is unlimited in that should the market price of the underlying asset start accelerating above the strike price, the option's value gets greater and greater until the earlier of expiry of the option or exercise thereof (LIFFE, [S.a.]a). As is shown below, the option writer is obliged to tender the underlying asset at the strike price no matter what the market price of the underlying asset may have risen to. On the other hand, decreases in the market price of the underlying asset *decrease* the call option's value because the difference between the market price and the strike price gets smaller, hence the option attracts lower "bargain" potential or intrinsic value for the option holder. However, because the option holder has the choice of whether or not to exercise his option, the maximum an option holder can lose from an out-of-the-money option is his option premium paid to acquire the option contract; hence the option holder has limited risk (LIFFE, [S.a.]a).

The call option writer's risk profile is the exact opposite to that of the buyer (i.e. the option holder). Increases in the market price of the underlying asset of an at-the-money or in-the-money call option create a *lower* option value for the option writer up until the earlier of the exercise date or the expiry date of the option. This is because if the option were exercised immediately, the option writer would either need to immediately acquire an identical asset on the market for the higher market price and sell it to the option holder for the lower strike price. Alternatively, the option writer

could use his existing asset and sell it to the option holder at the strike price instead of the higher market price. Consequently, higher market prices result in lower option value for the option writer since they can result in potential losses for the option writer. Although the option writer does receive a premium from the buyer which is retained in all circumstances, writing options can be a potentially high-risk strategy. The reason is that should the option holder exercise his call option, the option writer is obliged to tender the underlying asset at the strike price irrespective of the market price of the underlying asset at exercise date. This can potentially involve a substantial financial commitment. (LIFFE [S.a.]a.)

By the same token, it can be observed that decreases in the price of the underlying asset up until the earlier of the exercise date or expiry date of the option *increase* the call option's value from the writer's perspective. If the market price of the underlying asset falls below the strike price at expiry date, the call option buyer will not exercise his call option. The option writer will walk away from the contract with a cash inflow equal to the option premium received from the buyer upon the entering into of the original contract, which is the maximum profit he can realise. Therefore, unlike an option holder, the option writer's profit is limited to the net option premium received whereas his risk of loss is unlimited (LIFFE [S.a.]a). Ross *et al.* (2001:626) concludes that a call option (and a put option) is a "zero-sum game", in that the seller's risk profile is exactly the opposite to that of the buyer's.

### 2.6.2.2. Put options

A put option contract gives the buyer or option holder the right, but not the obligation, to **sell** the underlying asset at a fixed price at a future date (Ross *et al.*, 2001:625). A put option works in the exact opposite direction to that of a call option since over the option's term, decreases in market prices benefit the option holder and increases in the market prices benefit the option writer. The reason is that should the current market price of the underlying asset fall below the strike price, immediate exercise of the put option by the option holder will result in a profit for him since he can sell his goods at the higher strike price instead of the lower market price. On the other hand, should the current market price of the underlying asset rise above the strike price, the option holder will not want to exercise his put option as he will rather sell the underlying asset for the higher market price instead of the lower strike price.



### 2.6.3. The use of option contracts in commerce

The London International Financial Futures Exchange (LIFFE) ([S.a.]a) stated that option contracts are granted over many things including agricultural commodities, bonds, shares, share indices, interest rates and exchange rates. Hull (2002:6-7) divided option contracts into two categories, namely *over-the-counter options (OTC options)* which are options between two counterparties tailored to meet the specific requirements of the counterparties and *exchange traded options* which are standardised agreements to buy or sell options on an options exchange. In fact, Levinson (1999:191) observed that the face value of contracts traded on option exchanges worldwide reached \$70 trillion in 1998, a rise from \$62 trillion in 1997 and \$52 trillion in 1996.

Options are used in commerce today for numerous purposes. Hull (2002:7) divided the users of options into three categories: *hedgers*, *speculators*, and *arbitrageurs*. Hedgers use options to reduce or insure themselves against the risk they face from potential future adverse movements in the price of an asset. For example, a company may wish to purchase a machine for a certain price at some time in the future, but is worried about the potential of increases in the market price of the machine at the future date. To hedge against such risk, the company could purchase a European call option from a broker or its supplier, entitling it to purchase the asset at a certain fixed price (i.e. the strike price) at a future date. Should the market price of the machine be greater than the strike price at the expiry date, the company most probably would exercise its call option and acquire the machine at the lower strike price. The company would then have hedged itself against adverse price increases in the underlying commodity (i.e. the machine) since it would have locked in the price that it pays for the machine (i.e. the strike price). Alternatively, should the market price fall below the strike price at expiry date, the company would simply waive its rights in terms of the option contract and forfeit its option premium paid to acquire the call option. (Hull, 2002:8-9.) The above option contract would be an OTC option since it is a unique option contract catering for the specific needs of the company in question.

A put option may also be used as a hedging vehicle. Should a company own government bonds and it feels the market price of such government bonds will fall, it

could purchase American put options giving it the right to sell the government bonds at a certain fixed price any time until the expiry date of the put options. Should the underlying government bond price fall below the strike price at any time during the options' term, the company most probably would exercise its put options during this period and would realise its government bonds at the strike price instead of the prevailing market price. Thus, by purchasing put options, the company would have immunised itself against a fall in the government bond price.

LIFFE ([S.a.]a) and Levinson (1999:191) referred to options as also being used as trading instruments by speculators whereby they make profits from short-term market fluctuations. For example, a punter or speculator may purchase a call option on the US dollar if he feels that it will rise against other currencies. Should his view be accurate, the value of the call option will increase. Such an option would be an exchange traded option in that the instrument itself would be bought and sold on a recognised options exchange through a central clearing system. Many exchange traded option contracts are not "physically settled" in that the underlying asset is not physically sold for the strike price at the exercise date (LIFFE, [S.a.]a). Rather, at the exercise date, the difference between the market price of the underlying asset at this date and the strike price is settled in cash between the parties after taking into account transaction costs. Such settlement is known as *closing out* the option contract, which is done by entering into an equal but opposite option contract which cancels the original contract.

Arbitrageurs are the third category of users of options. *Arbitrage* is a trading strategy of taking advantage of two or more securities being mispriced relative to each other. In the case of options, an arbitrageur may wish to profit from the discrepancy between prices in different markets. (Hull, 2002:12-13 & 171.) Ross *et al.* (2001:630) stated that many option types are available and many are created each day. As the topic of this dissertation is employee share options, it will now briefly explore what a normal traded share option is, before focusing solely on employee share options.

## 2.7. TRADED SHARE OPTION CONTRACTS

A *share or equity option* is an option contract whose underlying asset is a share in one or more companies or a share price index (LIFFE, [S.a.]a). Many share options

are actively traded on options exchanges and such share options are referred to as *traded share options*. For example, in the United States, share options can be publicly traded on the American Stock Exchange, the Pacific Stock Exchange, the Philadelphia Stock Exchange and the Chicago Board Options Exchange. (LIFFE, [S.a.]a.)

The information on traded share options is available in many national newspapers. Kamlet, Morris, Lott and Kim (1999) and Hull (2002:170) identified the following as being available in one form or another in such publications:

- Name of the underlying share.
- Underlying share price.
- Strike price (or exercise price).
- Premium to be paid for the option, plus brokerage costs.
- Type of option (i.e. a call or a put).
- Expiry date.

A typical example of a traded share option quoted in the Wall Street Journal is as follows:

IBM 31 Oct 90 Call at \$2.00

This means that the traded share option is a call option and the company associated with the option is IBM Corporation. The strike price is \$90.00, which means that the option holder can purchase the underlying shares in IBM Corporation at \$90.00, even if they are trading on the New York Stock Exchange at \$100.00. Furthermore, if a person wishes to purchase the option, he must pay \$2.00 as option premium times the number of shares plus brokerage commission. Alternatively, should he wish to sell or write the option, he will obtain \$2.00 times the number of shares less brokerage commission. The above option expires on 31 October, meaning that the option holder can exercise his rights until 31 October of the relevant year. (Kamlet *et al.*, 1999.)

Kamlet *et al.*, (1999) stated that traded share options are typically written in blocks of 100 shares. Thus, should an investor buy one IBM 90 Call at \$2.00, he is actually buying a contract to buy 100 shares of IBM Corporation at \$90 per share on or before

the expiry date in October. One would need to multiply the price of the option by 100 in almost all cases. In the above example, the option holder would pay \$200 as option premium plus brokerage commission to buy the call option. (Kamlet *et al.*, 1999.) Should the buyer exercise his option, his broker would be instructed accordingly and the person who wrote the call option would be notified and would sell the IBM shares at \$90 per share. Kamlet *et al.* (1999) reiterated what was said in paragraph 2.6.3 in that share option traders rarely exercise their options and buy (or sell) the underlying security. Instead, at exercise date they buy back the option (if they originally wrote a put) or sell the option (if they originally bought a call) and settle the difference in cash. This saves commission and is far more practical than delivering the underlying shares, which are anyhow available on the market. (Kamlet *et al.*, 1999.)

Similarly, should the investor wish to sell or write the call option on the IBM shares, he would instruct his broker to write 1 Oct 90 Call IBM, and his bank account would be credited with \$200 less brokerage commission. If the IBM share price does not reach \$90 before the call expires, the option writer would keep the \$200 less brokerage commission. Should the share price reach above \$90, the option writer would be “called” and he must deliver the shares to be sold at \$90 per share. The option writer can either use his existing IBM shares or must buy new shares on the market at the prevailing market price in order to settle the contract. Brokerage commission is also payable by the option writer upon the exercise transaction. Such transaction is usually closed out and only the value of the option at exercise date is settled between the two counterparties. (Kamlet *et al.*, 1999.)

The risk profile of both the option holder and option writer are identical to that described in paragraph 2.6.3 above. Finally, it is also necessary to appreciate that option traders rely on *gearing* or *leverage* to profit from their investments. In the above example, if the share price rose above \$90 at the exercise date, the option holder’s profit would be far greater than his comparative returns had he bought the underlying shares instead of the call option. However, should the share price have fallen below the strike price, the comparative losses in buying the options as opposed to the shares would have also been far larger. (Hull, 2002:10-11.) It is not the intention to go into further detail into the intricate workings of traded share options as

this falls beyond the scope of this study. An explanation as to the workings of employee share options follows in the next section of the text.

## 2.8. INTRODUCTION TO EMPLOYEE SHARE OPTION SCHEMES

It is quite possible for the company itself to write a call option on its own shares and issue it to a third party in exchange for cash. These types of options are known as *share purchase warrants*. Such options, if exercised, would be settled by the issue of the company's own shares leading to an increase in its issued share capital. (Hull, 2002:177.) The wide use of share purchase warrants was described by Berle and Means (1932:180) as early as 1932. These authors reported that at 30 April 1929, the issued share capital of the American and Foreign Power Company consisted of 1 413 000 ordinary shares and share purchase warrants calling for 3 619 000 shares – twice the total of the existing shares! (Berle & Means, 1932:183).

An employee share option (ESO) is a share purchase warrant granted by a company to its employee in exchange for his services. Therefore, instead of compensating the employee with cash or with actual shares (which is the case with a share incentive scheme), the company compensates the employee with options to *buy* shares in the company itself (i.e. call options). In other words, the company writes call options on its own shares and grants them to its employees. The main reason cited for granting ESOs is that they are a means of tying management compensation to the share price (a measure of company performance) and are one of the ways of preventing or minimising the agency problem (Gitman, 2000:23). The logic is that if the employee is granted (say) 1 000 share options when the market price of his company's shares was R10 per share, he would be motivated to work harder to maximise his company's share price in order to increase it above R10 so that he could exercise his share options at R10 and pocket the difference between the market price and the exercise price (i.e. the intrinsic value) as a profit. MyOpionValue.com ([S.a.]c) also emphasised that share options align the employee's financial future with the success of his company; if the company does well, so do the owners which includes the optionees. The issue of whether share options do in fact align corporate and management interests is elaborated upon at the end of the chapter in paragraph 2.12. Two other advantages cited for the use of ESOs are the fact that they save cash for the company (since the employees are paid in ESOs instead of

cash) and enable the company to attract and retain key employees due to vesting conditions (see below) (Katsanis & Brown, [S.a.]).

ESOs, like most other equity compensation schemes, are granted to employees as part of an overall *share option plan* or *share option scheme*, usually regulated by a special tax dispensation regime. Bate and Buckley (2002:11) cited the UK Inland Revenue service as defining a share option plan as “a scheme set up by an employer under which employees may be given a right, known as a share option, to buy a certain number of shares at a fixed price at a particular time”.

A typical share option plan will encompass the following components:

- Eligibility terms.
- Number of options.
- Exercise price.
- Grant date.
- Vesting conditions and vesting date.
- Expiry date.

(Renninger, 2000; MyOptionValue.com, [S.a.]c.)

### 2.8.1. Eligibility terms

Many share option plans enumerate which group of employees are eligible to participate in the plan. For example, in South Africa, the eligibility for share options extends only to directors and senior managers. (Towers Perrin, 2001:8.) In countries like the United States, share options may be extended to most or all of the company’s full time employees (Rosen, 2002c). More often than not, ESOs are granted to employees (especially directors) in addition to their normal compensation as an *extra incentive* to induce them to execute their jobs properly in an attempt to increase the share price (FRA Investment Education Series, 2002).

### 2.8.2. Number of options

The option plan will enumerate the number of options the employee is entitled to. It is quite feasible for an employee to be granted an option award under which the number of options to be earned varies according to certain performance criteria (FASB, 1995:para. 306).

### 2.8.3. Exercise price

The exercise price is equivalent to the strike price for a normal traded option and is the price the employee must pay for the underlying shares if he exercises the share option. Such price can either be equal to or greater than the prevailing market price of the shares on the date the company grants the share options. (MyOptionValue.com, [S.a.]c.) Both Towers Perrin (2001:7) and Hull (2002:177) noted that in most ESO contracts around the world, exercise prices are typically equal to the market price of the underlying shares at grant date (i.e. they are at-the-money).

### 2.8.4. Grant date

The grant date is the date at which an option or a string of options is granted to the employee. Grant dates can be the date the employee is hired, after the annual report and any other date the company deems it appropriate to incentivise employees to continue company progress. (MyOptionValue.com, [S.a.]c.)

### 2.8.5. Vesting conditions and vesting date

Most ESO contracts include *vesting conditions*. These are conditions that must be satisfied before the employee is entitled to exercise his share options. Such conditions can be broken down into the following:

- *Service conditions* – the employee must remain in the entity's employ for a specified period before he can exercise his options. Such options are also termed *fixed options* or *plain vanilla plans*.
- *Performance conditions* – the company must achieve a certain growth target (e.g. share price increase or market share growth) before the employee can exercise his options. Such options are also termed *variable* or *performance options*.

(IASB, 2002a:paras. BC166-167; Cuny & Jorion, 1995:195; IASC, 2000:Appendix D.)

The date on which the employee fulfils the vesting conditions is called the *vesting date*. From this date until the expiry date, the option can be exercised and the underlying shares can be bought and sold. However, before this date, the option cannot be exercised. (MyOptionValue.com, [S.a.]c.) If the vesting criteria are not met, the options will lapse and are forfeited (IASB, 2002b:para. IG31). Many varieties exist

as to how companies can structure the vesting conditions. For example, an option award may provide that the entire award vests at the end of a certain period, known as *cliff vesting* (FASB, 1995:para. 293). However, other awards may provide that the options vest according to a *graded vesting* schedule. For example, 40% may vest in two years followed by 20% per year for the next four years. (MyOptionValue.com, [S.a.]c; FASB, 1995:para. 201.)

### 2.8.6. Expiry date

This is the last day at which the option can be exercised. Beyond this date, the rights in terms of the option become extinct and the option no longer has any value. Unlike traded options described in paragraph 2.7 which have an expiry date of usually far less than 10 years from the grant date, ESOs have an expiry date of up to 10 years from the date of the grant. (MyOptionValue.com, [S.a.]c.) Furthermore, unlike traded option contracts, ESOs are granted to an employee as a form of compensation and usually cannot be bought or sold on the open market (Brown & Katsanis, 2002). The implications of this as well as other differences between ESOs and traded options are explored in more detail in Chapter 4.

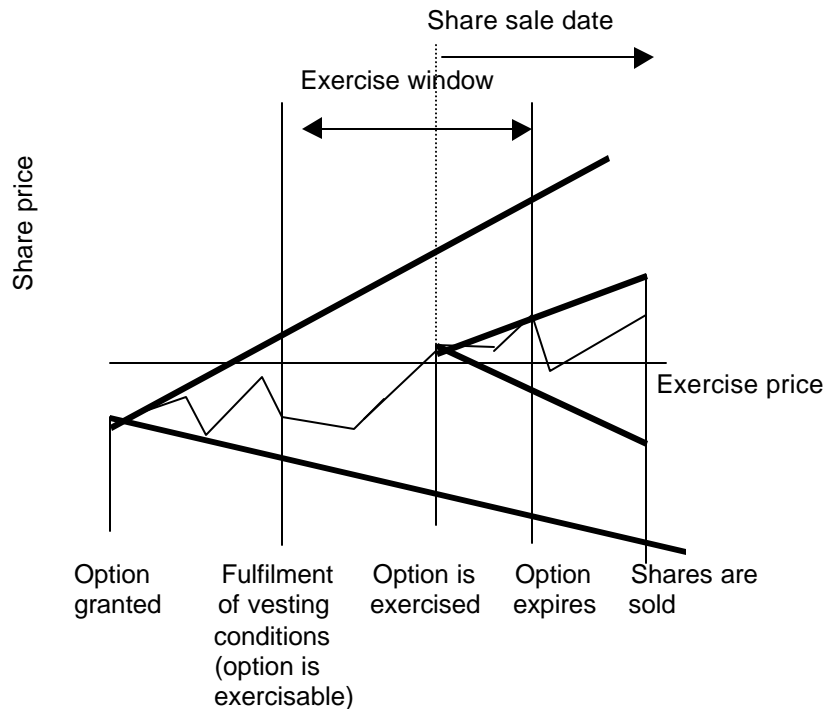
To summarise, at the grant date the ESO is granted to the employee in exchange for his services performed or to be performed and it cannot be exercised until all the vesting conditions are fulfilled. If the vesting conditions are fulfilled, the ESO is capable of being exercised from this date (vesting date) onwards until the expiry date of the ESO. Such period is known as the *exercise window period*. Like any normal call option, an ESO is in-the-money if the current market price of the company's shares exceeds the exercise price. Likewise the ESO is underwater if the current share price is less than the exercise price and it is at-the-money if the current share price equals the exercise price. If the ESO is in-the-money during the exercise window period the employee most probably will exercise his ESO and realise a gain equal to the difference between the market price of the underlying shares at exercise date and the exercise price. Any company shares purchased on exercise date can either be sold immediately to cash-in the exercise gain or they can be kept and sold at a later stage. Should the ESO remain underwater during the exercise window period, the employee will allow the option to lapse unexercised. If however the vesting conditions are not fulfilled during the vesting period, the ESO lapses and it



can never be exercised. It is also important to point out that ESOs are inalienable after grant date and any value attributable to them can only be exercised via the exercise thereof.

The following diagram adapted from Huddart (1994:210) serves to illustrate the mechanics of an ESO contract:

### Institutional features of an ESO



**Figure 1**

**Source: Huddart (1994:210)**

As a background to the accounting treatment of ESOs it is now deemed necessary to consider the developments and proliferation of employee share options in the United States of America, the United Kingdom and the Republic of South Africa. The United States of America has been selected due to its vast number of employee share schemes and research performed in that country regarding this topic. The United Kingdom has been chosen due to its large economy and advanced developments regarding employee share option schemes. Finally, the Republic of South Africa was chosen as it is the country where this study is being conducted and furthermore, it highlights the contrast between First World developments in the area of share option schemes and the developments in South Africa in this regard.

## 2.9. EMPLOYEE SHARE OPTION SCHEMES IN THE UNITED STATES OF AMERICA

### 2.9.1. Introduction

The European Union (2002b), in its report on employee share options, commented that the practice of granting share options to employees in the United States started in the mid 1950s when option grants were generally limited to senior executives. High technology US companies started granting options to other non-managerial employees (known as *broad-based options*) in the 1960s, and by the 1970s, many more employees were receiving regular option grants. With the share market crash in the early 1980s, options fell out of vogue in the United States, but when PepsiCo initiated a new broad-based share option plan in 1989, they came back as a popular compensation vehicle. (European Union, 2002b:para. 1.1.1.)

Kaub, Zhang, Lopati, Dutchak and Eyzerman (2002:1) stated that in the late 1980s and early 1990s, shareholders pushed executives for performance and the US Congress capped the tax deductibility of executive compensation not directly tied to incentives that benefit shareholders. According to Kaub *et al.* (2002:1), this was one of the catalysts of the growth in share options in the early 1990s. Since then, the 1990s has seen the growth in the number of US employees being granted ESOs increase dramatically. In fact Rosen (2002b) reported that during the 1990s, research conducted by the NCEO pointed to the fact that the number of US employees being granted share options grew from less than one million at the start of the decade to about 10 million by the end. Rosen (2002d) presented the following table with estimates of the growth in share options in the United States:

### Estimated growth of optionees over time

Year	Number of employees holding share options
1992	1 000 000
1993	1 750 000
1994	2 350 000
1995	3 400 000
1996	4 000 000
1997	4 000 000-5 300 000
1998	5 700 000-8 400 000
1999-2002	7 000 000-10 000 000

**Table 1**

**Source: Rosen (2002d)**

The NCEO (2002b) concluded that for growth orientated smaller American companies, share options were an excellent way of preserving cash (since no physical cash was needed to compensate management, as they were being compensated with share options instead) while giving employees a slice of future growth. However, Rosen (2002b) pointed out that contrary to popular belief most US employees that received share options in the period 1990 till about 2002, did not work for dot-com initial public offering (IPO) companies. Instead, he reported that over this period about 15% to 20% of all public companies in the United States gave employees share options, and many of such companies were outside the technology sector. He stated that many banks, retailers and pharmaceutical companies in the United States provided broad-based options. (Rosen, 2002b.)

By 2002, between 20% and 25% of US public companies made share options available to most or all of their full-time employees and some were even extending them to part-time employees as well. However, while the growth in such broad-based options has been an important economic trend in the United States, research points out that 65% to 70% of the total options granted in the United States were granted to executive management. (Rosen, 2002c.) Morrissey (2000:1) cited a 1998 US survey conducted by the Financial Markets Center that the 220 top managers at Fortune 500 companies received an average of 279 times the number of share options of a normal employee in such firms. The survey also found that almost 11% of US share options went to the CEO in 1998 and 21% went to the top five executives. She also

cited a 1999 survey done by the Federal Reserve of 415 US firms, that only one third of companies offered share options to employees other than top executives and fewer than seven percent of the surveyed companies offered share options to non-managerial employees. (Morrissey, 2000:1.) By 2002, Rosen (2002d) concluded that on the whole, most US companies did not grant share options broadly and that share options were concentrated at the top of the organisation. The above concentration of share options at executive level has been one of the causes for the abuses of share options as a means of remunerating managerial employees in the United States. This is discussed in more detail in paragraph 2.12 below.

There are essentially two types of share option plans available in the United States, namely Incentive Stock Options (“ISOs”) and Nonqualified Stock Options (“NQSOs”) (European Union, 2002b:para. 1.2.1). Although Employee Stock Purchase Plans (ESPPs) or section 423 plans are sometimes classified as share option plans, the NCEO does not classify them as part of share option plans (NCEO, 2002c). Both the ISO schemes and NQSO schemes are discussed briefly in the following sections as it is not the intention to give a full exposition of the schemes, but rather a synopsis of the main features of such schemes.

### **2.9.2. Incentive Stock Option schemes (ISOs)**

With an incentive stock option (ISO), a company grants the employee an option to purchase company shares at some time in the future at a specified price. Subject to certain requirements, the employee will exercise the option at some time when the value of the underlying shares is greater than the exercise price of the option. Like any other call option, as the value of the shares increases relative to the option exercise price, the employee has the potential to benefit from the increase in the share’s value over the option exercise price, subject to section 422 of the Internal Revenue Code (“IRC”) requirements. (Johanson, 1999.)

Companies may receive special ISO tax treatment if the following criteria are met per section 422 of the IRC:

- The options must be granted pursuant to a written plan that is approved by the shareholders of the company within one year of the plan’s adoption by the board of directors (European Union, 2002b:para. 2.1.2).

- The plan must specify the aggregate number of shares that may be issued (European Union, 2002b:para. 2.1.2).
- The exercise price must be at least equal to the fair market value of the underlying shares at the grant date (European Union, 2002b:para. 2.1.2).
- The options may only be granted to employees and must be exercised during employment or within three months of termination of employment (European Union, 2002b:para. 2.1.2). According to MyOptionValue.com ([S.a.]a), outside directors, contractors and consultants cannot receive ISOs.
- The plan must indicate the employees, or class of employees, eligible to receive the options (European Union, 2002b:para. 2.1.2). MyOptionValue.com ([S.a.]a) notes that employees that hold 10% or more of the shares of the company, cannot be granted ISOs unless the exercise price is at least 10% higher than the market price of the shares at grant date and the option must not be exercisable more than five years from the grant date.
- The options cannot be exercisable more than 10 years after grant date (European Union, 2002b:para. 2.1.2).
- There is a limit as to the amount of ISOs which can be exercised during one year. ISOs that can be exercised in one year are limited to \$100 000 in underlying share value based on the value of the shares at the grant date. Any options granted in excess of this amount are treated as Nonqualified Stock Options. (European Union, 2002b:para. 2.1.2.)

The European Union (2002b:para. 2.1.4) stated that in the United States, there are no restrictions as to the class of shares that a company can grant ISOs over. There are also no restrictions on the type of company that may grant options under this type of plan. Furthermore, there are no discriminatory laws in the US that relate to share options. Consequently, the company has discretion as to which employees shall receive share options and how many options are to be granted, provided the employees are employed by the company. However in practice ISO grants are generally limited to senior executives. (European Union, 2002b:para. 2.1.3.)

Provided the above requirements per section 422 are met, the employee receiving an ISO recognises no taxable income upon the ISO's grant (receipt) or exercise (Standing Committee on Employment, Education and Workplace Relations in

Australia, 2000:236). However, Johanson (1999) stated that upon the ultimate sale of the shares, there will be tax implications for the employee. He pointed out that the tax treatment of the disposition of option-exercised shares depends on whether or not the shares were disposed of in a *qualifying disposition* within the *statutory holding period* for ISO shares. The *ISO statutory holding period* is the later of two years from the date of the granting of the ISO to the employee or one year from the date that the shares were transferred to the employee upon exercise of his share options. Thus, the following tax consequences arise:

**Qualifying disposition:** If the disposition occurs *after* the completion of the requisite ISO statutory holding period, then all of the gain is treated as a capital gain, equal to the difference between the option exercise price and the sales proceeds. The employee will thus be taxed at favourable capital gains tax rates, rather than at the ordinary income tax rate.

**Disqualifying disposition:** If the disposition does not occur *within* the requisite statutory holding period, the following tax consequences ensue for the employee at the time of the disposition:

- He recognises ordinary income equal to the difference between the option exercise price and the fair market value of the shares at the time of option exercise (i.e. the intrinsic value).
- He recognises a capital gain equal to the difference between the fair market value of the shares on the exercise date and the disposition proceeds.

(Johanson, 1999.)

Both Johanson (1999) and MyOptionValue.com ([S.a.]a) emphasised that ISOs are subject to the so-called Alternative Minimum Tax (AMT) for which provision must be made where applicable at the exercise date.

In general, the employer granting an ISO is not entitled to a tax deduction with respect to the issuance of the option or its exercise. The amount received by the employer as the exercise price will be considered the amount received by the employer for the transfer of the ISO shares. (Johanson, 1999.) The company may however deduct general management and administration expenses associated with the share options (European Union, 2002b:para. 3.5.2).

### 2.9.3. Nonqualified Stock Option plans (NQSOs)

Johanson (1999) defined the term *Nonqualified Stock Option (NQSO)* or *nonstatutory stock option* as “any type of employee stock option to purchase company shares that, for some reason, does not satisfy the legal requirements to qualify as an ISO or a purchase plan option”. Many broad-based plans (other than section 423 plans) are nonqualified. A NQSO is the simplest of the share option plans in the United States. (Johanson, 1999.)

NQSOs are characterised by the following:

- Unlike ISOs, NQSOs can be granted to anyone within or related to the company. Thus, contractors, directors and consultants can also be granted NQSOs. (MyOptionValue.com, [S.a.]b.)
- There is no minimum term for which the share options must be granted and no maximum term for which the share options may subsist. In practice, companies generally limit the option term to 10 years. (European Union, 2002b:para. 2.2.1.)
- MyOptionValue.com ([S.a.]b) noted that NQSOs can be granted at an exercise price below the prevailing market price of the shares at grant date.
- Like any normal ESO, if NQSOs are not exercised at the expiry date specified in the option plan, the employee forfeits his right to exercise such options, i.e. the options expire (European Union, 2002b:para. 2.2.2).
- Within the plan itself, there are provisions on who may receive option grants under the plan. The eligibility criteria outlined in the plan, however, is left to the discretion of the company. Most plans are limited to employees of the parent or any consolidated subsidiary. (European Union, 2002b:para. 2.2.3.)
- There are generally no restrictions as to the class of shares one can grant options over. For example, employees of a Parent Company A can receive Subsidiary B shares (European Union, 2002b:para. 2.2.5).
- There is no restriction on the type of company that may grant options under this type of plan (European Union, 2002b:para. 2.2.6).
- While in theory there need not be any limit to the number of options an employee is eligible to receive, the plan will typically impose a limit based on the *number* of options an employee may receive and not on the *value* thereof (European Union, 2002b: para. 2.2.7).

The tax implications of a NQSO are governed by section 83 of the Internal Revenue Code. As far as the employee is concerned, Johanson (1999) noted that unless the NQSO has a fair market value that can be readily determined, it will not result in a taxable transaction upon the employee's receipt of the option (i.e. at grant date). As almost all ESOs are not publicly traded (refer to paragraph 2.8.6) they do not have a "readily ascertainable market value at grant date", hence no tax event arises as a result of the grant. Instead the employee will pay ordinary income tax on the difference between the exercise price paid for the shares upon exercise of the options and the fair market value of the shares at exercise date less any amount paid for the option. This results in the appreciation in the value of the shares being treated as ordinary income and not as a capital gain. If the shares are held after the exercise date, any additional gain made by the employee as a result of the sale of the shares is then generally treated as capital gain subject to taxation at capital gains tax rates. (Johanson, 1999.)

From the employer's perspective, aside from certain social security contributions and other payments, it will be entitled to a corporate tax deduction at the exercise date equal to the same amount as the ordinary income recognised by the employee. US employers would use NQSOs to attain the same (or similar) benefits as provided by ISOs without the necessity of having to conform to the requirements of section 422 of the IRC. Using NQSOs to compensate and provide an incentive for employees, the employer would be able to give them a tangible reward for their efforts without using any liquid cash resources. (Johanson, 1999.) In addition, if the NQSO did not include performance conditions and therefore met the definition of a "fixed plan" per Accounting Principles Board Opinion No. 25 (APB 25) – *Accounting for stock issued to employees*, no expense was required to be recognised in the income statement if the exercise price was equal to or greater than the prevailing market price of the shares at grant date (APB, 1972:para. 8). Both Towers Perrin (2002:1) and Morgenson (1998:213) found that the corporate tax deduction for NQSOs coupled with the fact that in most cases no expense was required to be recognised for such option plans, were two of the contributing factors leading to the unbridled growth in NQSO fixed plans being the preferred form of long-term incentive instrument used by many US companies during the late 1990s till late 2001. The debate regarding the expensing of ESOs is discussed in detail in Chapter 3 (paras. 3.4-3.7).



## 2.10. EMPLOYEE SHARE OPTION SCHEMES IN THE UNITED KINGDOM

### 2.10.1. Introduction

The European Union (2002a:para. 1.1.2) reported that in the United Kingdom, equity participation is regarded as an integral part of a company's employee reward strategy. Despite the legal and regulatory framework within which a company will need to operate, over the past 35 years there have been a wide variety of share option plan designs available in the UK. The above report observes that it was the taxation treatment of share options relative to other forms of employee compensation, which was instrumental in determining the degree of popularity of share options in the UK over the latter part of the 20<sup>th</sup> century. At the time of writing, share options were the most widely used category of employee equity incentive participation in the United Kingdom. (European Union, 2002a:para. 1.1.2.) A noteworthy feature of ESO plans in the United Kingdom, is that for most UK listed companies, the ESO scheme will involve performance criteria which must be met before the option can be exercised (Bate & Buckley, 2002:12).

Share option plans in the UK fall into the following categories:

- Plans that have received Inland Revenue approval ("approved option plans").  
Within such schemes are the following plans:
  - Company Share Option Plans ("CSOPs") (formerly known as "Executive Schemes").
  - Enterprise Management Incentive ("EMI") options.
  - Save As You Earn ("SAYE") plans.
- Plans that have not been nominated for Inland Revenue approval ("unapproved option plans").

(BCS Partnership, 2002.)

The UK Inland Revenue published statistics on employee share plans in the United Kingdom covering the period 1979-1980 to 1998-1999. According to the latest figures, 1 172 listed companies and 2 860 unlisted companies had a CSOP in place and 761 listed companies and 485 unlisted companies operated a SAYE plan. The Inland Revenue did not publish detailed data on EMI option plans. However, it noted that in the first year of operation to July 2001, 1 170 companies granted EMI options

and in the first two years of the EMI option regime, over 2 500 companies granted EMI options (this was the original target for the first three years) and more than 115 companies per month were deciding to operate an EMI option plan. (European Union, 2002a:para. 1.3.5.)

As far as the employer is concerned, the European Union (2002a) highlighted the fact that unlike the United States, there is only limited specific UK tax law dealing with the availability of a corporate tax deduction for share option plans. The availability, amount and timing of a corporate deduction for ESOs is based on general UK tax principles. It must also be emphasised that UK company law does not allow a company to own its own shares. As a result, UK companies make use of an employee benefit trust to acquire shares for use in their share option plans. (European Union, 2002a:paras. 7.4.1 & 1.1.2.)

Only the salient features of CSOPs, EMI option plans, SAYE plans and unapproved option schemes are discussed below. It is not the intention to give a comprehensive tax and legal synopsis of such option schemes, as this is not the focus of this study. Rather a brief summary of the legal requirements and tax implications is given for each share option scheme.

### **2.10.2. Company Share Option Plans (CSOPs)**

CSOPs are discretionary option plans in that, with limited exceptions, tax law permits the company to have discretion over which employees are granted share options. CSOPs are used widely by UK listed companies. Although such schemes are sometimes operated by unlisted companies, the share capital structure of such companies may not satisfy the eligibility requirements for favourable tax treatment. (European Union, 2002a:para. 2.1.1.)

The Income and Corporate Taxes Act 1988 provides the various criteria necessary to receive CSOP tax-favoured treatment, the most salient of which are summarised below:

- The grant of options at a discount to the market value of the underlying shares at grant date is not permitted.

- At any one time, an employee is not permitted to hold unexercised CSOP options in respect of shares whose aggregate value exceeds £30 000. For this purpose, the value is calculated at the date the option is granted.
- There is no minimum term for which the share options must be granted. However the beneficial tax treatment that can be achieved via a CSOP will apply only if the option is exercised in a tax-favoured manner, the conditions for which are that the option must be exercised at least three years after it was granted and at least three years after the date on which the employee last exercised a CSOP option in a tax-favoured manner.
- Options may not be granted for a term of more than 10 years from the grant date.
- Eligibility for a CSOP option grant is restricted to someone who is at the time either a full-time director or an employee of the company. These requirements need not be satisfied at the time the option is exercised.
- The type of shares that may be used for a CSOP must be part of the ordinary share capital of the company in question. They must also be of a class listed on a recognised stock exchange or be in a company that is not under the control of another company, or be shares in a company that is under the control of a non-close listed company. The shares must be fully paid up and not redeemable. Generally, the shares must not be subject to any restrictions other than restrictions that apply to all shares of the same class.
- Generally, there are no restrictions over the type (trade/industry) of company that may use a CSOP.
- Finally, CSOP options must be non-transferable, except on the death of the option holder, when the option holder's personal representatives may exercise them within 12 months of the option holder's death.

(European Union, 2002a:paras. 2.1.2-2.1.10.)

As far as the employee is concerned, there are no income tax consequences on grant date. The gain upon the exercise of the option (i.e. the option's intrinsic value at exercise date) is only taxed if the qualifying conditions are not adhered to (i.e. if exercise takes place within three years after the option was granted and/or within three years of the date on which the employee last exercised a CSOP option in a tax-favoured manner). Upon the disposal of the underlying shares, the employee will be subject to capital gains tax, upon the excess of the disposal proceeds over the

aggregate of the option exercise price and the taxable amount (if any) on the option exercise. (European Union, 2002a:paras. 3.1.1. & 4.2.1-4.2.2.)

### 2.10.3. Enterprise Management Incentive (EMI) option plans

The European Union (2002a) stated that the EMI option regime was introduced in 2000 as part of the UK Government's proposals to encourage entrepreneurial activity and to attract and retain key employees. Participation is restricted to employees of smaller, independent companies carrying on "qualifying trades" as defined in the Finance Act 2000. EMI options benefit from a particularly attractive tax regime, assuming that the applicable conditions continue to be satisfied. (European Union, 2002a:para. 1.1.7.)

The Finance Act 2000 provides the various criteria necessary to receive EMI tax treatment, the most salient of which are summarised as follows:

- The company must, *inter alia*, meet the following requirements:
  - It must have gross assets of less than £30 million.
  - It must be a "qualifying trading company", or the holding company of a "qualifying trading company" as defined in paragraphs 17-19 of Schedule 14 of the Finance Act 2000.
  - It must not be controlled by another company.
 (BCS Partnership, 2002.)
- Options may be granted over most ordinary shares, with a maximum value of £100 000 per employee and the aggregate value of shares under EMI options sponsored by the company is limited to £3 million (BCS Partnership, 2002).
- EMI options need not be granted on an "all-employee" basis in that they need not be granted to all employees of the company. An option is capable of being an EMI option provided it is granted for commercial reasons in order to recruit or retain an *employee* in the company. An EMI option may also be granted to a so-called "eligible employee". An eligible employee is a person who is an employee of the company and commits at least 25 hours a week to the company (or, if his working time is less, 75% of his total working time). An EMI option cannot be granted to someone who has a material interest in the company. (European Union, 2002a:para. 2.3.3.)

- There is no minimum term for which the option must be granted. However, the option must be capable of being exercised within 10 years of the grant date. Thus, if the exercise of an EMI option depends on the fulfilment of performance conditions, it must be possible to satisfy such conditions within 10 years. (European Union, 2002a:para. 2.3.4.)

From the employee's perspective, there are no income tax implications at grant date if the above requirements are met (BCS Partnership, 2002). The exercise of an EMI option is only subject to income tax in the following circumstances:

- the option is exercised more than 10 years after the grant date,
- the exercise price of the option is less than the market value of the underlying shares at the grant date, or
- the option is exercised more than 40 days after the occurrence of a "disqualifying event" as defined in the Finance Act 2000.

(European Union, 2002a:para. 3.3.)

Upon the disposal of the underlying shares, gains are taxed at capital gains tax rates with the Business Assets Taper Relief calculated from the grant date. Such taper relief reduces the effective tax paid by the employee. (European Union, 2002a:para. 4.4; BCS Partnership, 2002.)

#### **2.10.4. Save As You Earn (SAYE) option plans**

Bate and Buckley (2002:21) defined a Save As You Earn (SAYE) plan as "an option scheme that has attached to it a plan that allows employees to save the necessary funds they will need to exercise their options and purchase the underlying shares". The European Union (2002a:para. 2.2.1) noted that unlike EMI options and CSOPs, SAYE plans are "all-employee" plans and involve all employees who decide to participate in committing funds over a period before the option exercise.

Both the European Union (2002a) and the BCS Partnership (2002) summarised the various criteria necessary to receive SAYE tax treatment in terms of the Income and Corporate Taxes Act 1988, as follows:

- SAYE options may be granted with an exercise price equal to up to 20% less than the market value of the underlying shares at grant date. Such share options can

be exercised three, five or seven years from the grant date, timed to coincide with the maturity of a contracted savings plan (see below). (BCS Partnership, 2002.)

- At the time the SAYE option is granted to the employee, he must enter into a savings contract, which involves monthly deductions (normally from his salary) of a fixed amount of between £5 and £250 for three, five or seven years. Simple interest of three percent per annum, tax free, is payable on the employee's savings. (BCS Partnership, 2002; European Union, 2002a:para. 2.2.2.)
- At the end of the savings contract (called the "bonus date"), the above contributions are returned to the employee together with a tax-free bonus, the amount of this depending on the length of time such savings contract has been in operation for. With effect from 1 September 2002, for a three-year contract the bonus is equal to 1.8 months contributions and, for a five-year contract, the bonus is equal to 5.7 months contributions. If an employee who has entered into a five-year contract retains his contributions in the savings plan for a further two years, the bonus is equal to 11 months contributions. (BCS Partnership, 2002; European Union, 2002a:para. 2.2.2.)
- Employees use the proceeds of the savings contract (including the bonus or interest) to either exercise the SAYE option or withdraw the cash, tax-free. Any shares acquired on exercise of the SAYE option must be paid for with monies not exceeding the amount of the savings contract (together with any interest or bonus received). (European Union, 2002a:paras. 2.2.3-2.2.4.)
- Except in limited circumstances, SAYE options are not capable of being exercised prior to the bonus date. Other than in the case of death, options must not be capable of being exercised more than six months after the bonus date. A SAYE option is not transferable, except on the death of the option holder. (European Union, 2002a:para. 2.2.5.)
- A SAYE plan must be open to all employees and full-time directors of the company. Other employees and non-UK resident employees may be invited to participate at the company's discretion. However, anyone who is not a director or employee of the company is excluded from participation in a SAYE plan. (European Union, 2002a:para. 2.2.8.)
- Where the SAYE plan involves the use of shares of a close company, an individual who has, or has had within the preceding 12 months, a material interest (25% or more) in the close company may not obtain options. Nor may an

individual who later obtains a material interest, exercise the SAYE option whilst he holds this interest or within 12 months of having such an interest. In general terms, a “close company” is one that is under the control of five or fewer participators, or of participators who are directors. (European Union, 2002a:para. 2.2.9.)

- Finally, similar requirements to CSOPs govern the type of shares that may be used for SAYE plans (European Union, 2002a:para. 2.2.10).

Aside from the tax advantages described above, the exercise of a SAYE option is not a taxable event unless the exercise occurs within three years of the grant as a result of certain events such as the takeover of the company. The exercise of the option is not a chargeable event for National Insurance Contributions (NIC) purposes. (European Union, 2002a:para. 3.2.1.)

The realisation of a capital gain on the disposal of shares acquired on the exercise of a SAYE option is a taxable event. However, there is scope after the SAYE option exercise to transfer up to £7 000 worth of shares to a tax-free fund and, in this case, the transfer does not constitute a disposal for tax purposes. (European Union, 2002a:para. 3.2.2.)

#### **2.10.5. Unapproved option plans**

The European Union (2002a:para. 2.4.1) referred to the fact that despite their comparative lack of tax efficiency, unapproved option plans are popular in the UK. Since they do not receive a special tax treatment, unapproved plans do not have to fulfil special conditions (e.g. being broad-based) and thus offer a greater scope for flexibility. The report noted that both listed and unlisted companies use them widely. In fact, many UK companies operate unapproved option plans alongside approved plans to grant further options in excess of the CSOP £30 000 limit. (European Union, 2002a:para. 2.4.1.)

The report made the following comments in relation to the key features of unapproved option plans in the context of tax and NIC law requirements:

- There is no minimum and maximum term for which unapproved options must be granted. However, tax and NIC consequences may arise on the option grant if the option is capable of exercise more than 10 years after the grant date.

- Participation in an unapproved option plan is at the company's discretion. An unapproved option plan can be selective on participation and level of participation by employees in the plan.
- There are no restrictions over the nature of the shares over which options may be granted. There are also no restrictions on the type of company that may grant unapproved options. Furthermore, there are no restrictions governing the value of shares in respect of which options may be granted to the employee.
- The option exercise price may be less than the market value of the underlying shares at the grant date.

(European Union, 2002a:para. 2.4.4.)

It is unusual for the grant of an option to be a taxable event. However, there will be an income tax charge if the option has **both** of the following characteristics:

- The option is capable of exercise more than 10 years after the grant date.
- The option is granted with an exercise price at a discount to (i.e. lower than) the market value of the underlying shares on the grant date.

The exercise of an unapproved option is a taxable event. Furthermore, the realisation of a capital gain on the disposal of shares acquired on the exercise of an unapproved option is a taxable event, subject to capital gains tax. (European Union, 2002a:para. 3.4.)

## 2.11. EMPLOYEE SHARE OPTION SCHEMES IN THE REPUBLIC OF SOUTH AFRICA

### 2.11.1. Introduction

South Africa does not have any specific tax legislation allowing companies to follow a specific share option scheme in order to receive favourable tax treatment. As such, most gains made by the employee upon the exercise of share options and upon the subsequent sale of the underlying shares, are subject to taxation. Interestingly, both the Margo Commission (1987:5) and Ormiston (1990:37 & 130-145) recommended that tax relief should be introduced in South Africa for employee share participation, yet the government never implemented such recommendations.

According to Towers Perrin (2001:4), of all the share incentive schemes in operation in South Africa, almost 80% will include share options. Similarly, McManus (2003)



concluded that of the share incentive schemes observed in South Africa, the majority (73%) use share option schemes.

Although the research on ESOs and corporate performance is relatively small in South Africa, it was reported in Business Times (1999) that Adcorp Holdings Limited, the market leader in recruitment and staffing services in 1999, used share options very successfully as a means of retaining their key employees. However, the dramatic fall of share prices in 2001-2002 has made many share options of South African companies underwater resulting in the question being asked whether share options are a suitable motivational tool for management (Kemp, 2002a).

### **2.11.2. Salient features of typical share option schemes**

The following features were observed as being features included in a run-of-the-mill share option scheme in South Africa:

- Towers Perrin (2001:7) observed that share options are usually granted with an exercise price equal to the market price of the company's shares at the grant date. This was also emphasised by Stein (1999) and McManus (2003). However, McManus (2003) emphasised that several companies have indicated that recent share options were issued at exercise prices of 20% below the market price of the underlying shares, due to volatility in share prices.
- The eligibility for share options in South Africa extends to directors and senior managers. Employees on lower levels of the organisation are not normally granted share options. (Towers Perrin, 2001:8.) Bussin and Thomson (2000) felt that this trend should change in that share option grants should be broad-based and made available to all levels of employees.
- In South Africa, the granting of share options is at the discretion of senior management (Towers Perrin, 2001:8). In fact the King Report on Corporate Governance for South Africa recommended that a remuneration committee be set up consisting entirely or mainly of independent non-executive directors, to make recommendations to the board regarding remuneration packages for directors (King Committee on Corporate Governance, 2002:para. 2.5).
- Towers Perrin (2001:7) found that the typical options granted in South Africa will include performance criteria attached thereto. The terms of the share options vary according to the executive level and performance/contribution to the organisation.

Hence, the criteria used will vary from one option issue to another depending on the organisation's goals. (McManus, 2003.)

- Bussin and De Beer (2003:4) observed that most South African companies awarded ESOs based on the grant date value of options as a factor of the executive's guaranteed compensation.
- The typical granting of options occurs whereby the options are granted in tranches over several years, e.g. 20% in year two, 40% in year three and so on. Some companies allow the options to vest only after three years following the grant date allowing a third to vest each year over the next three years (graded vesting). (McManus, 2003.) Bussin and De Beer (2003:4) found that the average vesting period for options in South Africa was five years.
- McManus (2003) found that the maximum option term in South Africa was 10 years.
- Typical schemes will also include a so-called "lock-in" or "golden handcuff" period, in terms of which the employee is not entitled to encumber or dispose of his shares (acquired from exercising his option) for a period of three to ten years after the option grant date (Ferreira, 2003:2). This has potential tax implications with the advent of capital gains tax in South Africa from on or after 1 October 2001.
- Both Bussin and De Beer (2003:5) and Towers Perrin (2001:10) found that one of the major considerations when granting share options to employees in South Africa is the effects of taxation. As current South African tax law is very inflexible when it comes to share options, taxation will continue to play a major role when designing ESO schemes in South Africa.

### **2.11.3. Tax structured schemes for employee share options**

Having discussed the characteristics of ESOs in South Africa in general, a brief discussion of the legal and tax implications of the two main types of ESO schemes, namely normal share option schemes and combined option/ deferred sale schemes, follows below.

#### **2.11.3.1. Normal share option schemes**

Under these schemes, like most other option contracts described in paragraphs 2.9-2.10, the employees are granted options by either the company or a share trust to

purchase or subscribe for the company's shares at the market price of the shares at grant date. Such options are usually exercisable (or vest) over a period of three to ten years. (Stein, 1999.)

One of the advantages of a share option scheme in South Africa is that since no loan or credit is extended to the employee, no fringe benefits tax is payable by him. Furthermore, the employee is only "locked" into buying the shares if he decides to exercise the option. There is accordingly no risk whatsoever to the employee pursuant to any fluctuation in the market value of the shares, as in the case of a traditional share purchase scheme. (Stein, 1999.)

However, any gain made by an employee upon the exercise of an ESO, being the difference between the market price of the shares at exercise date over the exercise price less any amount paid for the option, is fully taxable in the employee's hands in terms of section 8A of the Income Tax Act (South Africa, 1962:sec. 8A). Furthermore, gains realised by the employee upon the sale of the underlying shares subsequent to the exercise of the option are subject to capital gains tax for periods on or after 1 October 2001. The taxable capital gain is determined as the difference between the proceeds upon the sale of the shares as exceeding the sum of the exercise price paid for the shares and the amount taxed in the employee's hands at exercise date. (South Africa, 1962:paras. 3 & 20(1)(h) Schedule 8.)

Unlike the United States, South African companies are never allowed a deduction for tax purposes equal to the gain upon the exercise by an employee of his share options as such loss would not be considered to meet the requirements of the general deduction formula per the Income Tax Act of 1962.

### **2.11.3.2. Combined share option/deferred sale schemes**

These schemes are variants of a deferred sale/allotment scheme. A share trust is set up which is issued with company shares with the share subscription price remaining outstanding on interest-free loan account by the trust to the company. Instead of a binding sales contract being concluded between the share trust and the employee upfront, an option to enter into such contract is granted to the employee. (Stein, 1999.) The exercise price of the option is set equal to the market value of the shares at grant date. Should the employee exercise his options, it results in him subscribing

for the shares on the basis that payment for and delivery (including transfer of ownership) of such shares is deferred to a future date or dates. Prior to delivery and payment, the employee receives no dividends or other benefits attaching to the shares. (Ferreira, 2003:1-2; Stein, 1999.)

The taxation implications of such schemes are complex and are dealt with very briefly below. In essence, the general legal view is that, in the case of deferred delivery, there is no loan or credit granted to the participant and so, no taxable fringe benefit arises (Stein, 1999). However, the gain made by the employee upon the exercise of his share options, being the difference between the market price of the shares at exercise date (not delivery of the shares) over the exercise price less any amount paid for the option, is taxable per section 8A. Likewise, any gain made by the employee upon the subsequent disposal of the shares is subject to capital gains tax as a capital gain for disposals occurring on or after 1 October 2001. At present, taxation in South Africa under normal income tax is at a top marginal rate of 40%, whereas the top effective rate for taxable capital gains is 10%. Thus, the decision as to when to exercise the share options will depend on a view of the share price and the taxation consequences due to the disparity between the different tax rates. (Ferreira, 2003:2.)

It must be pointed out that should any share option scheme have a “golden handcuff” period in that the optionee cannot exercise his options for a specific period of time, section 8A(1)(b) provides that the taxpayer may defer the taxable gain upon the exercise of his share options, for inclusion in his taxable income in the tax year in which he is entitled to dispose of his shares (South Africa, 1962:sec. 8A(1)(b)).

## **2.12. THE ASSOCIATION BETWEEN EMPLOYEE SHARE OPTION GRANTS AND CORPORATE PERFORMANCE**

### **2.12.1. Introduction**

As mentioned in paragraphs 2.5 and 2.8, the main thrust of the argument for compensating employees with ESOs is the incentive effect of linking the executive’s pay to performance. Indeed, over the last decade, share options have provided the lion’s share of performance-based incentive compensation (Yermack, 1995:238).

Yermack (1995:237-238) found that share options represented approximately one-third of CEO compensation between 1990 and 1991, compared to only one-fifth in 1984. By 1997, share options were responsible for 55% of a CEO's pay package. Such explosive increase in share options mainly occurred at the executive level. This is evident from the fact that in 1997, the average executive earned 326 times what a factory worker did! In the same year, Walt Disney CEO Michael D. Eisner exercised an incredible 7.3 million options worth more than \$400 million and Henry Silverman had more than \$832 million of unexercised share options on hand at the end of 1997. (Reingold, Melcher & McWilliams, 1998:57-58.) The above numbers may be astonishing but what's more unbelievable is how executives of companies with poor performance never saw their compensation level fall. Ray R. Irani, CEO of Occidental Petroleum Corporation, which reported a loss of \$397 million in 1997, was the fourth highest paid CEO in Business Week's 48<sup>th</sup> annual Executive Pay Scoreboard. (Reingold, Melcher & McWilliams, 1998:56.) The 2001 Business Week Executive Pay Survey revealed a similar picture of executives reaping excessive share option awards and gains (Lavelle & Jespersen, 2002:64-70). The abuse of share options coupled with the fact that ESOs are not always awarded effectively, has brought into question the logic of whether ESOs do in fact mitigate the moral hazard. The paragraphs below discuss the criticisms of ESOs as well as empirical evidence supporting their use.

### **2.12.2. Arguments against the use of employee share options**

As early as 1960, Griswold (1960:49) warned of share options "getting out of hand". He saw how share options were not broad-based and were often concentrated to a few senior employees. The problems of inadequate disclosure of option plans coupled with the fact that corporate executives were abusing options, led him to describe share options as "a problem of corporate management as well as corporate morality" (Griswold, 1960:49).

More recently, DeFusco, Johnson and Zorn (1990:626) proved that ESOs have asymmetric payoffs that could induce management to take on more risk in order to increase the company's share price. They found that implicit share price variances were observed following the announcement of an executive share option plan. This was coupled with variability in accounting returns and share price return volatility

subsequent to share option grants, suggesting option holding executives undertake more risky investments. (DeFusco, Johnson & Zorn, 1990:626.) In a later research paper by the same authors, they found that from a sample of firms that increased share option plans, there was a decline in their earnings relative to their industries. They also experienced on average long-term declines in cumulative abnormal returns. (DeFusco, Zorn & Johnson, 1991:42.) Morrissey (2000:6-7) could also not find conclusive proof about the link between share options and company performance. In fact, Vaknin (2002) quoted the Federal Reserve as stating that “there is presently no theoretical or empirical consensus on how stock options affect firm performance”.

Kruger (2002) felt that share options have little value in the long run since after exercising his share options, the executive will usually immediately sell the underlying shares on the market in order to diversify his portfolio. The executive will not reinvest such capital into the company but will rather invest it elsewhere. This in turn causes the executive to focus his attention on preserving his own private wealth rather than that of his company. (Kruger, 2002.) Therefore, both Jensen and Murphy (1990a:141) and Jensen and Murphy (1990b:261) concluded that the most powerful link between shareholder wealth and executive wealth is through direct *ownership* by the executive of shares in his company, rather than share *options* which do not give the director a real sense of ownership in the company. This was supported by Professor Brian Hall of Harvard Business School and Ira Kay, a compensation consultant at Watson Wyatt, a global consulting firm based in the United States (Casey, 2002).

Bennet Stewart of US consulting firm Stern Stewart, held that one of the disadvantages of share options is that they tend to lose their effectiveness to employees outside the executive arena. The reason is that companies comprise many divisions but only one share price. This allows for the potential for some workers to benefit (or lose) from efforts which they were not party to. Employees want to be rewarded on their own merits and efforts rather than on the basis of conflicting inputs from many employees and divisions. (Kemp, 2002a.) Crystal and Foulkes (1988:84) expressed similar sentiments. Stewart noted a further problem with share options. Share options are linked to the whimsical nature of the share market, which does not always reward companies who generate good returns. Sometimes the market may discount the company's future good performance resulting in a so-called

“plateau” even if the company subsequently generates profits, thus causing demotivation for employees. (Kemp, 2002a.) On the other hand, the share market may over-reward companies. Casey (2002) emphasised how corporate executives would use the market inefficiency of the share market bubble of 1995-2000 to help them exercise their share options, and conveniently not inform shareholders as to the true nature of the reasons for the up tick in share prices. Reingold, Melcher and McWilliams (1998:56-57) contended that a bull market actually makes a mockery of share options since the underlying shares rise even when firm-performance is poor. Therefore, an executive’s options could have considerable value not created by the executive’s performance (Reingold, Melcher & McWilliams, 1998:56-57). Due to their linkage to the share market, Griswold (1960:53) described share options as having “a very large element of lottery in them”.

Another problem associated with share options is *repricing*. Repricing is the act of resetting the terms (often the exercise price) of an ESO. Repricing usually occurs when the underlying share price falls to near or below the exercise price, resulting in the ESOs being underwater. To prevent this from occurring, either the exercise price of existing options is lowered or the existing ESOs are cancelled and replaced by issuing ESOs at a lower exercise price. (Reingold, Melcher & McWilliams, 1998:58, Griswold, 1960:53.) Over the last 40 years, it was not uncommon for management to restructure an option scheme after the company’s share price had plummeted. In effect, this meant that management could bail themselves out even if the share price performed poorly, by simply repricing the share option scheme, claiming that the decrease in share price was due to the vagaries of the market. Thus if repricing were to be allowed indiscriminately, there would be no downside in receiving options as compensation. The reason is that management can never lose if share prices fall as they can escape any possible losses by simply resetting the exercise price. On the other hand, should the company’s share price rise, management will profit from option gains irrespective of whether the ballooning in the share price was caused by bull market trends over which management has no control over or by outstanding corporate performance. (Henderson, 2001a:13; Marais, 2003; Mauboussin & Bartholdson, 2002:4-5; Harlan, 1994:A7; Reingold, Melcher & McWilliams, 1998:60.) Not surprisingly, Chance, Kumar and Todd (2000:132) found very little evidence of exercise prices being lowered in a bull market.

Casey (2002) was of the opinion that options promote executives to pump up the share price in good times but offer no incentive to executives to limit losses when the share price declines and they fall out-of-the-money. Others argue that share options cause management to focus on short-term thinking, regardless of the long-term consequences. They claim that managers who have been remunerated with options become tempted to raise the share price by whatever means (even if it means manipulating the accounting numbers) until they can exercise their share options and sell the shares on the open market. (Anderson, 2002; Henderson, 2001a:13.) Finally, as explained in Chapter 3 (para. 3.5.1), the exercise of options by employees results in new shares being issued on the market, which effectively involves a dilution of the existing shareholders' interest in the company. Consequently, granting of ESOs must be subject to strict control and circumspection since the indiscriminate grant of ESOs can materially dilute the existing shareholders' percentage holding in the company. (Griswold, 1960:53-54.)

### **2.12.3. Arguments in favour of the use of employee share options**

Despite the criticisms levelled at share options, academic literature does exist which supports the use of ESOs to reduce agency costs. Haugen and Senbet (1981:647) analytically proved that share options can play a vital role in ameliorating the agency problem associated with external finance as described by Jensen and Meckling (1976). Beck and Zorn (1982:1166) concluded that under certain share price functions, share options maximise the residual expected pay-off to the owner/investor of a firm. Brickley, Bhagat and Lease (1985:128-129) did find positive performance effects from long-range managerial compensation schemes, yet it was on average of only limited size. Similarly, Rajgopal and Shevlin (2002:145 & 167-168) concluded based on a sample of oil and gas producers, that ESOs do provide managers with incentives to mitigate risk-related incentive problems. However, their research only considered a small sample of firms within a single industry.

Recent research by Ittner, Lambert and Larcker (2003:123-124) demonstrated how lower than expected option grants to executives of "new economy" firms was associated with lower accounting numbers and share price. However, grants of share options in excess of that which was expected, did not negatively impact on



shareholder value. Nonetheless, their research had a number of important limitations to it. (Ittner, Lambert & Larcker, 2003:123-124.) Rosen (2002c) cited research done by Douglas Kruse and Joseph Blasi from Rutgers University. These researchers found that over a three year period, companies that grant options to most or all employees showed a 17% improvement in productivity over what they would have expected had they not set up such plans. Their return on assets increased 2.3% per year above expectation, while their share price was either better or the same as comparable companies, depending on how performance was measured. However, the above results were only as a result of granting broad-based share options to employees. (Rosen, 2002c.)

Other academic evidence exists which supports the view that share options can be optimal contracts. For example, Hemmer (1993:472) concluded that hedged options could be used to eliminate agency costs. Choe (2003:605) found that an optimal wage contract could be structured using share options provided the exercise price and the number of options granted are chosen correctly. Finally, Carpenter (2000:2311) found that compensating executives with options does not lead to greater risk taking by the manager. She found that the manager either moderates asset risk or reduces asset volatility than he would have experienced had he been trading in his own name. Furthermore, granting him more options may increase the manager's volatility in his personal portfolio, yet if he is risk averse, he will attempt to reduce this volatility which causes him to undertake less risky ventures with the company's capital. (Carpenter, 2000:2311-2312.) Despite these mathematical proofs of the optimality of share options, the question remains do they work in real life? Yermack (1995:287-288) concluded, after examining 792 US public companies between 1984 and 1991, that very few agency or financial contracting models described in the finance literature explain actual CEO share option behaviour.

Nevertheless, people like Alan Greenspan and Warren Buffet, two very influential individuals who have expressed severe criticism on current share option practices, agreed that if share option grants are properly structured, they can be highly effective in aligning interests of directors with that of the shareholders (Greenspan, 2002; Tully, 1998:136). Buffet felt that because many option plans do not include adequate performance criteria, it makes it very easy for a CEO to get rich by being average, and in a bull market, by even being worse than average, since he stated that "even

scrawny ducks that can't swim or quack rise in a swollen pond" (Tully, 1998:134 & 136). To address such problems, companies would need to structure ESO schemes in such a way that the vesting conditions would involve stringent and challenging performance hurdles which reward employees for superior economic performance rather than having vesting conditions based solely on years of employee service (Tully, 1998:136; Bussin & De Beer, 2003:5). Another possible solution proposed to address these concerns is the idea of indexing or varying the exercise price of the ESO to a benchmark's performance, like the JSE Securities Exchange (JSE) All Share Index. Such options are called *indexed options*. An indexed option only pays off if the firm's share price exceeds the specified moving benchmark. Using indexed share options, it protects the executive from the whimsical nature of the market and other uncertainties beyond the executive's control. Furthermore, this eliminates the need to reprice underwater options following a marketwide crash, e.g. the 2001 share market crash. (Johnson & Tian, 2000:36-37.) The idea of indexed options was supported by Rosen (2002c), Brumberg (2002) and Mauboussin and Bartholdson (2002:5).

In conclusion, it is fitting to say that incentive programmes alone cannot solve the agency problem. Without the correct corporate governance controls in place, efficient monitoring systems, product quality, competitive pricing, financial housekeeping and appropriate remuneration policies, incentives will not help; indeed they may prove to be counter-productive. ESOs must therefore not be seen as a guaranteed solution to the agency problem. Rather, if they include appropriate *performance hurdles*, they can be used as a tool to assist the company to *lessen*, rather than to eliminate the moral hazard.

## 2.13. SUMMARY AND CONCLUSIONS

As ESOs are a form of equity-based compensation, this chapter explored the nature of equity-based compensation and the reasons for its usage as a means of remunerating employees. Various studies conducted by numerous academics and institutions were cited in emphasising the point that under certain circumstances, employee share ownership improves profitability and maximisation of shareholder wealth over the long-term.

The technical aspects of option contracts in general, were explored from a legal and a financial point of view. The workings of both call options and put options were expounded upon as well as the risk profile of both the option holder and option writer. It was found that an option derives much of its value from the ability to buy (or sell) an underlying commodity or asset at the strike or exercise price, rather than the market price thereof. An ESO was defined as a share purchase warrant or a call option written by a company on its own shares and granted to an employee. Like any other call option, increases in the share price of the company's shares benefit the option holder and decreases in the share price harm the option holder. The option writer (the company) feels the opposite effect to the option holder (the employee) for movements in the company's share price.

The chapter then explored what an ESO scheme is, common components of such schemes and a brief introduction as to the proliferation of their use. In order to give a practical setting to the accounting problems to be encountered, it was deemed necessary to explore the most common ESO schemes available in the United States, the United Kingdom and the Republic of South Africa. The taxation and legal ramifications of such schemes were explored in order to give such background.

The performance effects of granting ESOs were dealt with. It was concluded that although ESOs in theory should lead to the alignment of corporate interests with that of management, empirical evidence, analytical observations and recent corporate abuses, have exposed weaknesses in this logic. ESOs cannot be assumed to be the perfect tool to ameliorate the moral hazard. Rather, if ESOs are used and structured correctly, they can be useful tools to assist in alleviating the moral hazard.

This chapter with its theoretical background sets the scene for the accounting aspects that are to follow.

## CHAPTER 3

### ACCOUNTING DEVELOPMENT AND THE EXPENSING DEBATE

#### 3.1. INTRODUCTION

Dechow, Hutton and Sloan (1996:1) asserted that accounting for employee share options (ESOs) has been the most controversial accounting issue ever dealt with by the Financial Accounting Standards Board (FASB). The problem not only surrounds itself by the debate as to whether or not ESOs should be expensed in the income statement, but also by the valuation of ESOs and the date of recognition for their transfer into the income statement and the balance sheet (Rouse & Barton, 1993:69).

This chapter delves into the accounting development of ESOs and industry's response thereto. Thereafter, the debate as to whether ESOs should be expensed and recognised in the financial statements is dealt with in detail. The arguments for and against the expensing of ESOs are presented.

#### 3.2. DEVELOPMENT OF ACCOUNTING FOR ESOs IN VARIOUS COUNTRIES

The discussion below examines the accounting standard developments regarding the accounting for ESOs in the United States of America, the United Kingdom and the Republic of South Africa. Such standards are only briefly summarised in this section, as they are considered in more detail in Chapters 4 and 5.

##### 3.2.1. United States of America

The United States have been the pioneers in research and standard setting regarding the accounting treatment of ESOs (Matisonn, 1999:41). Consequently, a brief review of the developments in the US regarding ESOs follows.

##### 3.2.1.1. Accounting Principles Board Opinion No. 25 (APB 25) – Accounting for stock issued to employees

Accounting for ESOs in the United States dates back to November 1948 when the American Institute of Certified Public Accountants (AICPA) issued Accounting Research Bulletin No. 37 (ARB 37) – *Accounting for Compensation in the Form of*

*Stock Options* (AICPA, 1953:para. 1, chapter 13B). In June 1953, the AICPA issued Accounting Research Bulletin No. 43 (ARB 43) – *Restatement and revision of accounting research bulletins*, which gave further guidance on the accounting treatment of ESOs (AICPA, 1953:chapter 13B). It was only in October 1972 that the Accounting Principles Board (APB), the predecessor to the FASB, issued a final standard known as Accounting Principles Board Opinion No. 25 (APB 25) – *Accounting for stock issued to employees* (APB, 1972).

Like its predecessor ARB 43, APB 25 was criticised for its inconsistent treatment for accounting for similar transactions. APB 25 specified that the cost of ESOs was to be expensed in the income statement measured by the excess, if any, of the underlying share price over the exercise price of the ESOs (the intrinsic value). For *fixed plans* (where the exercise price, the number of shares and the vesting date are known at grant date), this would mean that an expense of zero would be required if the exercise price was greater or equal to the market price on grant date, since the intrinsic value would be zero at this date. However, for *variable plans* (where the number of shares an employee receives is not finalised at grant date (for example share appreciation rights or performance-based ESOs)), APB 25 required that an expense would be recognised per the requirements of FASB Interpretation No. 28 (FIN 28) – *Accounting for Stock Appreciation Rights and Other Variable Stock or Award Plans*. (European Union, 2002b:paras. 9.2.1-9.2.3.) Consequently, most US companies granted options under fixed plans that were in-the-money or out-of-the-money at grant date, in order to recognise an expense of zero for such option plans under APB 25 (Bodie, Kaplan & Merton, 2003:63; Ciccotello & Grant, 1995:72). The above accounting treatment of utilising the intrinsic value to value ESOs was proposed primarily because at the date of the issue of APB 25, there existed no valuation model to value ESOs reliably at the grant date (APB, 1972: para. 10; AICPA, 1953: para. 12 chapter 13B). The reaction by US companies to APB 25 demonstrates that they were prepared to forfeit the advantages of granting performance-related ESO plans (i.e. variable ESO plans) by granting plans that were not performance based (i.e. fixed plan ESOs) so as to avoid the expensing of their ESOs and thereby benefit from the accounting loophole of allowing compensation cost to pass by unrecognised in the financial statements.

### 3.2.1.2. Exposure Draft No. 124 (ED E-124) – Accounting for stock-based compensation

In 1973 Fischer Black and Myron Scholes developed the Black-Scholes model, a calculus-based formula used to value exchange traded options (Brown & Katsanis, 2002). The publication of this formula, coupled with the opening of the Chicago Board Options Exchange, saw a huge boom in publicly traded options. This also contributed to an increasing use of ESOs as executive and employee compensation. (Bodie, Kaplan & Merton 2003:63; Michel & Garwood, 2002:2.) The above exuberance in the use of ESOs along with the inconsistency in accounting treatment proposed by APB 25, lead the FASB to reconsider APB 25 (Dechow, Hutton & Sloan, 1996:3).

In response to this concern and as a result of a lengthy position paper called *Accounting for Employee Capital Accumulation Plans* published on 4 November 1982 by the Accounting Standards Executive Committee (AcSEC) (the AICPA's senior technical committee on accounting matters), the FASB placed accounting for share-based payments on its agenda in March 1984 (Mozes, 1998:144). On 31 May 1984, the FASB issued an Invitation to Comment entitled *Accounting for Compensation Plans Involving Certain Rights Granted to Employees*. The FASB received 144 comment letters. During the FASB's deliberations between 1985 and 1988, more than 200 letters were received that commented on, and usually objected to, tentative conclusions reported in *Action Alert*, the FASB's publication on its actions and forthcoming projects. Such reaction was abnormal as commentators to an exposure draft first await its publication before they submit comments, whereas in this instance, a large number of comment letters were submitted before the exposure draft was even published. (Dechow, Hutton & Sloan, 1996:3; FASB, 1995:paras. 365 & 368.) This demonstrates the anxiety and fear that corporate America felt that their accounting loophole would be exposed causing them to reflect ESOs as an expense. This in turn would affect their earnings, share price and the amount they paid to their employees.

After much consideration and debate between 1988 and 1993, it was on 8 April 1993 that the FASB voted to require that the estimated value of be recognised as an expense. On 30 June 1993 the FASB issued its highly ESOs controversial Exposure Draft No. 124 (ED E-124) – *Accounting for Stock-Based Compensation*. ED E-124 proposed recognition in the income statement of the cost of ESOs that would

eventually vest, based on their fair value at the grant date for options granted after 31 December 1996 (FASB, 1995: para. 375.) The proposed statement would have required firms to recognise an asset (prepaid compensation, equal to the fair value of the option) and equity (outstanding option) at grant date, and amortise the asset to earnings over the vesting period.

Firms whose earnings would be most affected by ED E-124's proposal, namely new companies and high tech-firms, were in strong opposition to ED E-124 (Mozes, 1998:145; Thompson, 2002; Harlan, 1994:A8). In fact, the Securities and Exchange Commission (SEC) chairman Arthur Levitt Jr. was quoted in the Wall Street Journal as saying, "I've never seen the amount of corporate anxiety that this issue has raised" (Harlan, 1994:A7). The FASB received an astonishing 1 786 comment letters, including approximately 1 000 form (or standardised) letters on ED E-124. The vast majority of respondents were against the proposals of ED E-124 and many of the reasons for this had nothing to do with accounting. (FASB, 1995:para. 376.) This shows how desperate US companies were to prevent the expensing of ESOs, since they were prepared to present arguments that had no economic basis to them.

So determined were they that ED E-124 not be enforced, that they persuaded Senator Joseph Lieberman to introduce a bill known as the Equity Expansion Act of 1993, which directed that the SEC not require ESOs to be recognised as expenses, regardless of the FASB's proposals. This bill was highly criticised in that it was felt that legislation should not have interfered with accounting setting standards. (Journal of Accountancy, 1994a:19.) Nevertheless, in response to immense political opposition that may have even threatened the existence of the FASB, it withdrew ED E-124 on 15 December 1994 (FASB, 1995:paras. 59-60; Mozes, 1998:146; Journal of Accountancy, 1993:15-16). This indicates the magnitude of the issues at stake for US companies who were even prepared to close the FASB down to attain their objectives. The debate as to whether ESOs should be expensed in an entity's financial statements thus became a highly political and contentious issue.

### **3.2.1.3. Statement No. 123 (SFAS 123) – Accounting for stock-based compensation**

As a result of the resistance to ED E-124, the FASB retreated from its initial preferred position and on 23 October 1995 it issued a watered-down statement known as

Statement No. 123 (SFAS 123) – *Accounting for Stock-Based Compensation*. The statement did not require recognition of the ESO expense in the income statement, but instead allowed firms to choose between the preferred recognition model and an allowed alternative disclosure model (FASB, 1995:para. 11). The allowed alternative treatment, permitted companies to continue to apply the provisions of APB 25 to ESOs but to *disclose* the pro forma effects on net profit and earnings per share as if the recognition model in SFAS 123 had been applied (FASB, 1995:para. 45).

Inevitably, most US companies chose the allowed alternative disclosure model and continued to apply APB 25 to record the cost of ESOs at the intrinsic value at grant date, which was usually zero (Bodie, Kaplan & Merton, 2003:63). In fact, Balsam, Mozes and Newman (2003:32) noted that prior to 2002, virtually no US firm expensed the cost of its ESOs in the income statement. By May 2002, only two companies in the Standard and Poor's 500, namely the Boeing Company and Winn-Dixie Stores Incorporated, chose to expense ESOs in their income statements (Thompson, 2002). Thus, the proponents of not expensing ESOs succeeded in being able to continue applying APB 25 and not recognise an expense for ESOs paid to employees.

However, in light of the accounting disasters at Enron and WordCom and in response to recent criticism of SFAS 123 and more US companies adopting the recognition model in SFAS 123, the FASB issued Exposure Draft No. E-168 (ED E-168) – *Accounting for Stock-Based Compensation - Transition and Disclosure* on 4 October 2002 with amendments to the transitional arrangements for entities at wishing to change to the recognition model of SFAS 123. The exposure draft did not change the recognition and measurement provisions of SFAS 123 but rather proposed more prominent disclosures about the method of accounting for ESOs and the effect of such accounting on the financial statements. (Kaub *et al.*, 2002:6-7; FASB, 2002a:ii-iii.) In November 2002, the FASB issued an Invitation to Comment summarising the IASB's proposals on share-based payments and explaining the key similarities of and differences between its provisions and current US accounting standards (FASB, 2003a). On 2 December 2002, the FASB adopted the proposals of ED E-168 with a unanimous vote of its seven members and issued Statement No. 148 (SFAS 148) – *Accounting for Stock-Based Compensation - Transition and Disclosure* (Herz, 2003:8; FASB, 2002c:10). In March 2003, the FASB decided to add a project on its agenda relating to the issues of share-based payments and intended issuing a new exposure



draft on share-based payments by the fourth quarter of 2003 (Herz, 2003:14-17; FASB, 2003a). It seems that the FASB will now reconsider the accounting treatment of ESOs and will not be persuaded by political pressure in order to achieve its objectives.

### 3.2.2. United Kingdom

At the time of writing, there was no comprehensive UK accounting standard that specifically dealt with the accounting treatment for share-based payments and ESOs. (ASB, 2002). Financial Reporting Standard 4 (FRS 4) – *Capital Instruments* (issued December 1993 and revised December 1998), the current account standard dealing with shares and share capital, does not address the accounting for ESOs and only contains general requirements that the issue of shares or options should be recorded at the net proceeds received (IASB, 2000:84-85). However, aspects of ESO plans have been dealt with in various Urgent Issues Task Force (UITF) Abstracts.

#### 3.2.2.1. Urgent Issues Task Force (UITF) Abstract 10

The issues regarding ESO grants lead to the UITF issuing Abstract 10 – *Disclosure of Director's Share Options* in September 1994. Matisonn (1999:43) noted how this standard followed the disclosure alternative of requiring ESO plans and other option information to be *disclosed* in the notes to the financial statements under directors' emoluments, rather than being *recognised* in the income statement itself. Paragraph 5 of Abstract 10 reads as follows:

“while it is generally accepted that the grant of options is a ‘benefit’, many consider that the attribution of meaningful money value to an option at the date of grant can be very difficult. The difficulties of valuation stem from the fact that for most companies, valuation would require the use of theoretical models which become even more complicated and subjective when the rights under the options are contingent on future performance or other factors”. (Matisonn, 1999:43.)

Based on this, the UITF concluded that a disclosure model, as opposed to a recognition model, was more appropriate (Matisonn, 1999:43).

### 3.2.2.2. Urgent Issues Task Force (UITF) Abstracts 13, 17, 25, 30 and 32

At the time of writing, the accounting rules for share schemes in the UK were contained in two UITF abstracts, namely Abstract 13 – *Accounting for ESOP trusts* (issued 8 June 1995) and Abstract 17 – *Employee share schemes* (issued 12 May 1997 and revised 19 October 2000) (Bate & Buckley, 2002:32).

Abstract 17 requires that where options in respect of unissued shares (other than Save As You Earn (SAYE) options) are granted at a discount to the fair market value of the underlying shares at grant date, the discount is to be charged to the company's income statement. The timing of the charge to the income statement will vary according to the design feature of the specific share option plan. (European Union, 2002a:paras. 11.1-11.3; IASC, 2000: Appendix E.)

Abstract 13 requires consolidation of shares held by an Employee Share Ownership Plan (ESOP) trust with the company's financial statements. Such ESOP trust is consolidated into the company's financial statements and the shares are recognised as assets on consolidation until such time as the shares held by the ESOP trust vest unconditionally in the employees. Any permanent diminution in the value of such shares is to be recognised immediately as an expense. Where such shares are conditionally gifted or are given as an option to employees at below their carrying amount recognised on consolidation of the ESOP trust, the difference between the carrying amount of the shares and the amount payable by the employees therefor (nil in the case of a gift, or the exercise price in the case of an option) should be charged as an operating cost over the period of service of the employees in respect of which the gifts or options are granted. (Bate & Buckley, 2002: 37-38.)

Further accounting rules are contained in the following statements:

- Abstract 25 – *National Insurance Contributions on share option gains* (issued 27 July 2000) which covers the accrual for the estimated liability for National Insurance Contributions (NIC) between grant date and exercise date.
- Abstract 30 – *Date of award to employees of shares or rights to shares* (issued 15 March 2001) which addresses the issues relating to the date of the option grant for accounting purposes.

- Abstract 32 – *Employee benefit trusts and other intermediate payment arrangements* (issued 13 December 2001) which extends the principal established in Abstract 13 to include other assets paid from trusts.  
(Bate & Buckley, 2002:32.)

### 3.2.2.3. Financial Reporting Exposure Draft 31 (FRED 31)

The UK Accounting Standards Board (ASB) believes that a comprehensive UK standard on share-based payment transactions is urgently needed for the United Kingdom. Until recently, users of current UK standards have found the current accounting standards in the UK to be inconsistent and the charge to the income statement inadequate. The ASB therefore proposed in Financial Reporting Exposure Draft 31 (FRED 31) – *Share-based Payment* (issued November 2002), that the UK would need to adopt the final International Accounting Statement (IAS) on share-based payment which would be a positive step in convergence terms with international accounting in this respect. (ASB, 2002.)

### 3.2.3. Republic of South Africa

Matisonn (1999:15) proved that ESOs do represent an expense in terms of the prevailing South African accounting standards, namely: AC 000 – *Framework for the Preparation and Presentation of Financial Statements* (issued 1990) read with AC 116 – *Retirement Benefit Costs* (issued December 1996 and withdrawn February 2000). However, up until the time of writing, South African companies have never recognised ESOs as an expense in their income statements. Instead, the South African accounting profession has always adopted a disclosure model for ESOs, rather than a recognition model. (Ludolph, 2003.) Perhaps, this shows a deficiency with the accounting standard setting authorities in South Africa in that they did not even address the issues relating to the expensing of ESOs, let alone promulgate an accounting standard dealing with this contentious issue.

Extensive disclosure of share option plan details, exercise prices and other share option information is required by AC 116 – *Employee Benefits* which is based on its international equivalent, IAS 19 – *Employee Benefits* (SAICA, 2000:paras. 148-149).

This disclosure model is further expanded by section 297(2A)(g) of the Companies Act and the King Report on Corporate Governance for South Africa which requires

directors' emoluments to be classified in the annual report under the headings of earnings, share options and other benefits (South Africa, 1973:sec. 297(2A)(g); King Committee on Corporate Governance, 2002:para. 2.5.4).

Like SFAS 128 – *Earnings Per Share* issued by the FASB and FRS 14 – *Earnings Per Share* issued by the ASB, both AC 104 – *Earnings and Dividends Per Share* (issued January 1992) and AC 104 – *Earnings Per Share* (issued October 1998), required that South African companies disclose diluted earnings per share. What this entails is that companies reflect the maximum possible dilution of current earnings per share (EPS) assuming that all potential ordinary shares have been converted to actual shares. Only dilutive potential ordinary shares (of which in-the-money ESOs are an example) are included in the above calculation. (SAICA, 1992: paras. 21-28; SAICA, 1998:paras. 25-43; FASB, 1997:para. 20; ASB, 1998:paras. 21-28.) This in turn shows the potential dilution of existing shareholders' equity as a result of the future conversion of outstanding ESOs, thus disclosing a "cost" of the ESOs. This is discussed in more detail in paragraph 3.5.1.

Finally, in November 2002, the South African Institute of Chartered Accountants (SAICA) issued Exposure Draft 160 (ED 160) – *Share-based payment* for public comment, in response to Exposure Draft 2 (ED 2) – *Share-based payment*, issued by the International Accounting Standards Board (IASB). ED 160 was an exact replica of ED 2 as the SAICA intended to follow the IASB's developments in finalising its own standard on share-based payments. This is a positive step that demonstrates the SAICA's willingness to cooperate with international developments in the field of share-based payment accounting.

### **3.3. DEVELOPMENT OF ACCOUNTING FOR ESOs UNDER INTERNATIONAL ACCOUNTING STANDARDS**

At the time of writing, the mission of the International Accounting Standards Board (IASB) (formerly known as the International Accounting Standards Committee (IASC)), the setter of international accounting standards, was to establish common accounting standards in the European Union by 2005, and ultimately in the US and the rest of the world (Williams & Dreyer, 2003:16).

Like its international counterparts, until recently, the IASB followed a disclosure model regarding ESOs in that IAS 19 – *Employee Benefits* did not require the recognition and measurement of equity compensation benefits (IASB, 1998b: para. 145). Rather, IAS 33 – *Earnings per Share*, like AC 104, required that a diluted EPS calculation be done for each class of ordinary shares for entities whose securities are publicly traded in order to reflect the effects of dilutive options and other dilutive potential ordinary shares on the EPS calculation (IASB, 1997:paras. 24-42). This shows an inadequacy with the IASB at that time because despite the ED E-24 debacle in the United States and the mushrooming ESO grants worldwide, the IASB continued to allow ESOs to remain unrecognised and did not even issue an exposure draft on the issue of accounting for ESOs.

It was only in July 2000, that the IASB and the accounting standards boards of the USA, UK, Australia, Canada and New Zealand issued a joint Discussion Paper entitled *The G4+1 Paper – Accounting for Share-based Payment*, containing various recommendations regarding the accounting for share-based payments. The G4+1 Paper proposed that where shares or share options are issued as compensation, the fair value thereof should be charged to the company's income statement at vesting date. The paper concluded that a reliable option-pricing model must be used to determine the fair value of the shares or options. (Cavallo, 2002.) No further action was taken as a result of the proposals of this paper and ESOs were still allowed to remain off-balance sheet.

In July 2001, the IASB added a project on share-based payment to its agenda and agreed that the outcome of this project would lead to an exposure draft (ED) being issued. At its September 2001 meeting, the IASB reopened the comment period of the G4+1 Paper for additional comments. The IASB considered all the comments received on the G4+1 Paper which would pave the way for the issue of an ED called Exposure Draft 2 (ED 2) – *Share-based payment* on 7 November 2002. (IASB, 2003:2.) This ED, which essentially replaced the G4+1 Paper, was in response to growing pressures regarding the lack of international consensus regarding the accounting of ESOs coupled with the erosion of public confidence in financial reporting following the dotcom bubble, Enron, Global Crossing and WorldCom debacles in the US and criticism of executives for their abnormal compensation (Kaub *et al.*, 2002:8-9; Herz, 2003:8; IASB, 2002a:para. BC 05). In essence, the ED

requires initial measurement of share options granted to employees at grant date and recognition over the employee's service period. The valuation thereof is to be determined using an option-pricing model, making certain adjustments for the unique features of ESOs. The ED differentiates the accounting treatment depending on whether or not the shares or share options have been issued to employees or non-employees. The ED received over 230 comment letters from institutions, accounting standard bodies and investors around the world and the IASB plans on finalising the final accounting standard by the first quarter of 2004 (IASB, 2003:5 & 14). By then, the IASB will have a comprehensive accounting standard dealing with the accounting for ESOs.

### **3.4. INTRODUCTION TO THE EXPENSING DEBATE**

As mentioned in Chapter 2 (paras. 2.9 & 2.12.1), over recent years ESO grants have been mushrooming both in volume and in value. To emphasise this, Border (2002) reported that in the United States, share options awarded to senior management by the board of directors grew from \$50 billion in 1997 to \$162 billion in 2000. He further noted how Lawrence Ellison, one of the executives of Oracle Corporation, exercised share options worth \$706 million in one week (Border, 2002). Lavelle and Jespersen (2002:65) reported that in 2001, shares issued from ESO contracts accounted for 15% of all shares in issue in US companies. This is an astronomical number as it means that ESOs effectively granted to management were so rife, that they comprised 15% of all shares of US companies. Thompson (2002) revealed that in 2000, former Enron chief executive officer (CEO) Jeffery Skilling pocketed \$62.5 million by cashing in Enron share options and that Enron chairman, Kenneth Lay received \$123.4 million for his share options. In fact, Hall and Murphy (2002:4) noted that in the 1999 fiscal year, 94% of Standard & Poor's 500 companies granted options to their top executives, compared to 82% in 1992. This shows a phenomenal 12% increase in ESOs granted in a space of only 7 years. Furthermore, the grant-date value of share options accounted for 47% of total pay for Standard & Poor's 500 CEOs in 1999 from 21% of total pay in 1992 (Hall & Murphy, 2002:4). Although not specifically stated, it would be presumed that the above values were computed using the Black-Scholes option-pricing model, being the most common option-pricing model used in the US – refer Chapter 4 (para. 4.4.2.3).

These figures demonstrate why respondents to ED E-124 were so against the expensing of ESOs. They profited from the accounting loophole of not requiring the expensing for ESOs and reaped billions of dollars from this deficiency in the accounting rules. Consequently, many authors (Espahbodi, H., Espahbodi, P., Rezaee & Tehranian, 2002:344; Greenspan, 2002; Campbell, 1961:58) felt that the spread of ESOs as an incentive plan was not influenced by companies' desires to motivate employees, but rather by the fact that no expense for the cost of the ESOs needed to be recognised in the income statement. In fact, Thompson (2002) reported that Jeffrey Skilling testified before the US Congress that compensation with share options was an egregious way of inflating earnings: "you issue stock options to reduce compensation expense, and therefore increase your profitability". This is perhaps most evident from the way Apple Computer accounted for CEO Steve Jobs' salary. Their income statement showed \$1 as his salary over the past two years, yet in early 2000 he was awarded 10 million share options valued at almost \$400 million. Such \$400 million was not charged to the income statement, consistent with the prevailing US accounting standards at the time. (Botosan & Plumlee, 2001:311-312.) This reveals the ridiculousness of the situation, in that a company the size of Apple Computer was able to compensate its CEO with an exorbitant salary, and was able to only recognise an expense of \$1.

The excessive compensation being received by CEOs between 1995 and 2001 without such costs being charged to earnings, was building a paper castle which was being underpinned by excessive share prices on the back of highly inflated earnings during the information technology boom. In fact, in 1998 when the great bull market was raging, Morgenson (1998:213) wrote about the apparent "free-lunch" companies were experiencing as a result of the bull market. She described how US companies were using ESOs to keep employee costs down on the back of a rising share market and appreciating earnings. She quoted Scott Spector, a partner in the compensation division at Fenwick & West in California, as saying that "the mortgage [that ESOs will have] on the future is a problem that people haven't yet addressed". (Morgenson, 1998:217.) Just over two years since Morgenson's article, the share market crash of 2001 and the spate of corporate scandals in the US in 2002, began crumbling the forts of this paper castle created by the long bull market run. Transparency, corporate governance and the quest for confidence in financial reporting, has now become the

order of the day. It is in this light that the foray regarding the expensing debate has erupted since its dormancy in 1995 following the eventual publication of SFAS 123. It is intended to give a synopsis of the arguments against expensing ESOs and the arguments for expensing ESOs in the income statement in the paragraphs to follow.

### **3.5. ARGUMENTS AGAINST EXPENSING ESOs**

Although the proponents for expensing ESOs (the “expensers”) have increased in recent times, the arguments put forward against the expensing of ESOs need to be considered before delving into the arguments for expensing ESOs. In fact Brown and Katsanis (2002) name President George W. Bush, Senator Joseph Lieberman, former SEC chairman Harvey Pitt, the American Electronics Association and many high tech companies as supporting the non-expensing of ESOs. The following represents a summary of the arguments put forward by the persons against the expensing of ESOs (the “non-expensers”).

#### **3.5.1. The cost of outstanding share options is already reflected adequately in the diluted earnings per share number**

As early as 1932, Berle and Means (1932:151-152) referred to the potential dilution of per share value due to share options. Since the company is the option writer in the case of ESOs, should the employee exercise his ESOs, the company will need to tender its shares at the exercise price to settle the ESOs. Such shares can be issued from the following sources:

- The company can repurchase (or buy-back) the required number of shares on the open market and immediately reissue them to the employee at the exercise price.
- The shares can be issued from *treasury shares*. These are shares that have been previously repurchased by the company and are currently held in treasury (Gitman, 2000:45). In the United States, a company can reissue its treasury shares without obtaining shareholder approval (Gitman, 2000:46). However, in South Africa, although companies are permitted to repurchase their own shares, the reissue of the same shares after the share repurchase still requires the normal authorisation as for a fresh issue of shares (South Africa, 1973:sec. 85(8)).



- The requisite shares can be issued via a fresh issue of shares from the company's authorised but unissued share capital.

(Michel & Garwood, 2002:3.)

In all three cases, additional shares are issued by the company to settle the ESO which thereby dilutes the value of each *existing* share (also called a *share overhang*) since existing earnings are now spread over more shares. For example, a company may have produced an EPS of R10 per share (R100 000 earnings divided by 10 000 shares in issue), yet should the firm grant 1 000 options, the EPS could potentially drop to just over R9 per share (R100 000/ 11 000) should the options be exercised. Accordingly, it is argued that this dilution as a result of the transfer of part of the market capitalisation owned by existing shareholders to the ESO holders is one of the costs of ESOs.

Therefore, at the date ESOs are granted to the employee, this creates a potential dilution to the firm's existing shareholders' returns. In order to disclose this potential dilution to shareholders, AC 104, IAS 33, FRS 14 and SFAS 128 propose the use of the *treasury method* for disclosing such dilution. This method requires that the denominator in the EPS calculation be adjusted for outstanding share options to reflect a pro forma EPS (known as the *diluted earnings per share*) which would ensue should the share options be exercised at the relevant reporting date (IASB, 1997:para. 30). To calculate the incremental shares to be induced by the ESOs, the treasury method first assumes that all in-the-money ESOs are exercised at the exercise price at the reporting date. The full proceeds from the exercise of the ESOs are then assumed to be used to buy-back ordinary shares at the average market price of the ordinary shares during the period. The increased number of shares resulting from this calculation are to be included in the denominator of the diluted EPS computation which then shows the potential dilution of the current EPS should outstanding ESOs be exercised. (FASB, 1997: para. 17.)

On the one hand, the treasury method has been criticised by accountants and economists in that it includes unvested ESOs in the calculation of diluted EPS. Maxim Integrated Products Inc (2002:6) argued that because the denominator for diluted EPS includes unvested ESOs in its calculation, this *overstates* the denominator of the diluted EPS calculation and concomitantly overstates the diluted EPS figure. The

reason is that some unvested ESOs may be forfeited in the future and may therefore never be exercised and the diluted EPS calculation presumes all unvested ESOs will vest in the future and includes them in the calculation of diluted EPS. (Maxim Integrated Products Inc, 2002:6). On the other hand, the FASB were concerned about the fact that the treasury method *understates* the potential dilutive effect of options or options that are out-of-the-money, as it only requires options that are in-the-money to be added in computing the dilutive factor (FASB, 1997: para. 105). It is therefore evident that the diluted EPS figure is by no means an entirely accurate reflection of the dilutive effect of granting ESOs.

Nonetheless, although the treasury method has its shortcomings, campaigners for the non-expensing of ESOs argue that this method is the only generally accepted, reliable and comparable method of reporting the cost of ESOs to the company (FRA Investment Education Series, 2002; Maxim Integrated Products Inc, 2002:5). President Bush and the other “non-expensers” feel that the potential dilution of existing shareholders’ returns and ownership in the company is the real cost of ESOs, which is already disclosed under diluted EPS and need not be reflected in the income statement as an expense (World News, 2002; Coy, 2002; Rouse & Barton, 1993:67-68; Michel & Garwood, 2002:3). They believe that if an expense were to be recognised in the income statement, EPS would be “hit twice” – once in the denominator and again in the numerator (IASB, 2002a: para. BC49; EESOC, 2003:7; Livingston, 2002; Moreland, 2002). It is contended that the dilutive effect of ESOs cannot be the cost of ESOs, since the dilutive effect caused by the potential exercise of ESOs is a cost to the individual shareholder and not to the company. The company does not lose anything by ESOs being exercised; in fact, it gains capital from an exercise. Consequently, the use of diluted EPS does not recognise the cost to the company of paying an employee with ESOs.

Others contend that no expense should be recognised for ESOs as the cost of the dilutive effect is cancelled by the increase in share price and earnings induced by the incentive effect of ESOs (Malkiel & Baumol, 2002:A18; Aboody, Barth & Kasznik, 2001:1-2). This was supported by Moreland (2002) who felt that if the options expire underwater, this is a gain to the company since it was able to reduce its cash costs in exchange for ESOs that expired worthless. Both Moreland (2002) and Tyson (2002:14) concluded that such gain (which is not recorded in the financial statements)

partially offsets the cost of ESOs (which is also not recorded in the financial statements), hence no cost needs to be recognised for ESOs. It is contended that this conclusion is merely a speculation and could not be applied across the board for all companies, irrespective of their size and ESO grants. In addition, if companies do not grant performance-related ESOs, this assumption cannot hold either.

### 3.5.2. Share options do not meet the definition of an expense

The FASB's Statement of Financial Accounting Concepts No. 6 (SFAC 6) – *Elements of financial statements*, defines an expense as follows:

“outflows or other using up of assets or incurrences of liabilities or both from delivering or producing goods, rendering services, or carrying out other activities that constitute the entity's ongoing major or central operations”. (FASB, 1985:para. 80.)

Similarly, the IASB Framework defines an expense as

“decreases in economic benefits during the accounting period in the form of outflows or depletions of assets or incurrence of liabilities that result in decreases in equity, other than those relating to distributions to equity participants”. (IASB, 1989:para. 70(b).)

FRA Investment Education Series (2002) felt that because ESOs do not result in a “financial outflow”, “the use of an asset” or “the incurrence of a liability”, they are not “expenses” as defined. Instead, ESOs provide cash inflows to the company when employees exercise them (FRA Investment Education Series, 2002). Similarly, the European Employee Stock Options Coalition (EESOC) argued that an expense is only required when an asset is diminished or when a liability is incurred. As the issue of share options does not satisfy any of these requirements, it contended that no expense should be recognised. (EESOC, 2003:24.) However, such authors seem to have ignored the fact that the entity is paying the employee with a valuable financial instrument and it is this payment which is the cost to the company. The subsequent exercise of the ESO is a separate transaction to the compensation of the employee with the ESO instrument.

Derieux (1994:41) maintained that although in theory the ESO transaction may meet the definition of an expense (refer to paragraph 3.6.2), he felt that the granting of share options to employees is an internal transaction since no party outside the

organisation can participate because ESOs can never be sold. He felt that this was similar to internally generated goodwill, which is specifically prohibited from being recognised in financial statements in terms of IAS 38 – *Intangible assets* (para. 36) (issued July 1998 and revised December 1998) and Statement No. 142 (SFAS 142) – *Goodwill and Other Intangible Assets* (para. 10) (issued June 2001 and revised October 2002). Only goodwill purchased in a transaction with a party outside the organisation can be recognised when the value thereof can easily be determined. Consequently, he held that although ESOs do have value, they are an internal creation of value, which cannot be recognised in the financial statements until there is a transaction with a party outside the organisation. (Derieux, 1994:41.) It is submitted that the argument presented by Derieux (1994) is unfounded. The reason is that employees of an entity and even the shareholders of an entity are separate from the entity since in most countries corporate entities like companies are separate legal persona that exist apart from their shareholders and employees. Therefore, the notion that the appreciation in value of ESOs is an internal creation of value like internal goodwill is incorrect. Furthermore, the reason internal goodwill is not recognised in financial statements is not because it is an internal creation of value but because it cannot be measured reliably due to the subjectivity in attributing value to it (IASB, 1998a:para. 37). However, as explained in paragraph 3.6.7, ESOs can be measured with sufficient reliability, hence the comparison between ESOs and internally generated goodwill is incorrect.

As mentioned in paragraph 3.6.1, some argue that ESOs are an opportunity cost which must be recorded in the financial statements. However, Michel and Garwood (2002:4) disagreed and stated that opportunity costs are never reflected in corporate accounts. To these authors, the opportunity cost of ESOs is the cost of paying the employee with cash. They felt that if this opportunity cost is to be recorded, the opportunity costs of all other transactions should be recorded in financial statements. Doing this would make it impossible to make relevant comparisons between corporate accounts because of the subjective nature of estimating such costs. Hence, they felt that ESOs are not a genuine expense but rather an opportunity cost which must not be recorded as recording such transaction would prevent comparability and faithful representation of all transactions. (Michel & Garwood, 2002:4.) These authors have failed to analyse the true economic nature of an ESO. When an entity

compensates its employee with ESOs, the employee has been paid with a financial instrument which is an obligation upon the entity to issue its shares at the exercise price as opposed to their fair value. In other words, the entity has potentially forfeited in advance the difference between the fair value of the underlying shares at exercise date and the exercise price of the ESOs, and has used such potential forfeited proceeds to compensate the employee. (The ESO obligation is only a potential obligation since it is contingent upon the ESOs vesting and being in-the-money at the exercise date.) This ESO obligation of the company is equal to the opportunity cost to the company of forfeiting the potential proceeds it could have received had it issued its shares at fair value. However, it must be emphasised that the entity is not recognising an opportunity cost *per se*. Rather the economic nature of the ESO instrument is that it derives its value based on the opportunity cost to company of issuing its shares at the exercise price as opposed to the fair value thereof at exercise date.

### **3.5.3. The issue of employee share options is a capital transaction which the entity is not a party to**

Others contend that an expense for ESOs should not be recognised in the income statement, because the issue by the company of its shares to settle the ESOs is a capital transaction, which results in a change of the shareholders' percentage holding in the company. Such effect is not a cost to the company as such but rather a dilutive cost to the individual shareholder. Thus, the only visible effect of issuing ESOs is on the reported EPS number when the options are considered dilutive. Such people feel that this is already adequately reflected in the diluted EPS number. (Cavallo, 2002; Malkiel & Baumol, 2002:A18; McGraw, 2002; Rouse & Barton, 1993:67-68.) These authors do not take into account that the dilutive cost of ESOs is an issue only for the individual shareholder and not the company as a whole. Furthermore, to contend that ESOs are a capital transaction between shareholders is incorrect since the entity and its current and potential shareholders are two separate legal entities and any transactions between the two must be recorded.

In a similar vein, Cook (2000) stated that ESOs are not a cost to the company that issues them but rather are a cost to the shareholders who authorise the ESO grants.

This was supported by Meritt and Borders (2000) who noted that options represent a

decision by the shareholders to part with a percentage of their claim on the future earnings of the company in order to align employee interests to the success of the company and growth of shareholder value. Thus, they felt that option payments are not even compensation payments, but rather a unilateral offer by the shareholders of the company to share the financial rewards of the future enhanced business. To these authors, there cannot be a cost to the company if “an individual has agreed to make a contribution of human capital in exchange for an opportunity to share in risks and rewards with cash investors”. (Meritt & Borders, 2000.) This argument does not consider the fact that it is the company, not the shareholder, which has compensated the employee with the ESO instrument. The fact that the employee has agreed to be compensated with such an instrument proves the instrument has value. Thus, if the entity (not the shareholders) was able to obtain the employee’s services in exchange for the ESOs, it demonstrates that the entity must have incurred an outflow to acquire the employee’s services.

#### **3.5.4. The cost of employee share options cannot be estimated reliably**

The valuation of ESOs is discussed in detail in Chapter 4 (paras. 4.3-4.4). The arguments by the “non-expensers” with regards to the valuation of ESOs are presented below.

The IASB Framework defines the accrual concept as follows:

“In order to meet their objectives, financial statements are prepared on the accrual basis of accounting. Under this basis, the effects of transactions and other events are recognised when they [the exchange transactions] occur (and not as cash or its equivalent is received or paid) and they are recorded in the accounting records and reported in the financial statements of the periods in which they relate”. (IASB, 1989:para. 22.)

Therefore, if an employee renders services to his employer, the expense for his compensation must be recorded in the period in which the services are rendered and not when cash is finally paid to the employee. If it were to be assumed that ESO grants are to be expensed in the financial statements, the value of the ESOs granted to the employee in exchange or in payment for his services would need to be determined at an interim stage before exercise date, in order to recognise the compensation expense in the income statement when the services are rendered and

**not** when the cash is paid for such services. The problem with ESOs is that the valuation thereof is complex and highly controversial.

Because an ESO is a type of call option, option-pricing models, like the Black-Scholes model or the Cox-Ross-Rubenstein binomial model, could be used to value the ESO instrument. However, such classic option-pricing models were specifically developed to be used to value traded options which can be bought or sold on the open market (Brown & Katsanis, 2002). Since ESOs differ in a number of important respects to traded options, valuing ESOs with an option-pricing model like the Black-Scholes model may not produce accurate results (Malkiel & Baumol, 2002:A18). Nevertheless, most US companies used the Black-Scholes model to arrive at the value of the ESOs to calculate the pro forma effect on earnings per the allowed alternative in SFAS 123 and for disclosure in the SEC corporate proxy statements (IESOC, 2002; Wall Street Journal, [S.a.]; Berton, 1992:A2; Rouse & Barton, 1993:70). However, many researchers (IESOC, 2002; Frederick W. Cook & Co., Inc, 2002:2-3; Maxim Integrated Products Inc, 2002:3-4; Hall & Murphy, 2002: 37) found that the use of the Black-Scholes model to arrive at a fair value of outstanding ESOs, grossly distorted their true value.

On the basis of this, supporters of the non-expensing of ESOs reason that there is no accurate, reliable and consistent way of valuing ESOs. They feel that because option-pricing models do not accurately measure the value of ESOs at the date the services are rendered, the veracity of financial statements would be worsened, not improved, by adding an expense of a hypothetical value. (Frederic W. Cook & Co., Inc, 2002:2; EESOC, 2003:28.) However, as is discussed in paragraph 3.6.7, although the Black-Scholes model may distort the value of ESOs, it is by no means the only valuation model for ESOs. Therefore, basing an argument for not expensing ESOs totally on one valuation model seems absurd. The non-expensers feel that it is better to report a value of zero for ESOs as this makes financial statements more comparable and reliable (IASB, 2002a: para. BC 286). Nonetheless, by including an expense of zero as opposed to an estimate of the value of the ESOs distorts the financial statements even more since the user is under the impression that the ESOs cost the company nothing which is incorrect.

Ciccotello and Grant (1995:73) argued that most users and preparers of financial statement would be unfamiliar with the intricacies and mathematics involved in option-pricing models and would therefore be unable to value the ESOs correctly. These authors were also against the use of option-pricing models since they felt that such models rely on assumptions that can be confidential or manipulated (Ciccotello & Grant, 1995:73). Derieux (1994:41) therefore criticised FASB's proposals in ED E-124 by saying that "it seems the FASB's quest for technical purity will cause this issue to be mired in a swamp of subjective complexity". These arguments fail to take into account the fact that the entity can make use of an expert in the field of option-pricing to value its ESOs for financial reporting purposes and its auditors would audit such valuation, allowing it to be recognised with sufficient accuracy in the financial statements.

Finally, others argue that the inclusion in the accounts of an estimate of the fair value of ESOs is different and incomparable to other accounting estimates. The reason is that although estimates are routinely used in pensions, allowance for bad debts, depreciation, deferred taxes, etc., those estimates will eventually result in cash payments by the company (termed "trued up") and poor estimates will only distort the intertemporal allocation of income. With ESO value estimates, the non-expensers argue that the value that is initially provided for ESOs will never be trued up to reflect the employee's actual gain, if any, from the exercising of his ESOs (which is the eventual cost of the ESOs to the company). As a result, they contend that poor estimates of the value of ESOs will permanently distort financial statements and therefore ESOs should not be valued at all to prevent such distortion. (IASB, 2002a:para. BC281; FASB, 1995:para. 112.) This argument was also noted by Rubenstein (1994:24-25). It is contended that this argument does not recognise the fact ESOs are in fact eventually "trued up". The reason is that when the employee exercises his ESOs, the proceeds on the exercise is debited to the bank account, the share capital account is credited with the fair value of the shares at exercise date, the ESO account is debited with its balance at the exercise date and the balancing figure is charged to equity or earnings, depending on the accounting model used. Thus, over the life of the ESO, the company's earnings will eventually reflect the final intrinsic value of the ESOs (which is the eventual cost to the company of the ESOs)



and poor estimates of ESO value will also only distort the intertemporal allocation of income.

### 3.5.5. Share option costs are already available in the notes to the financial statements

The International Employee Stock Options Coalition (IESOC) declared that because no valuation method exists that can provide shareholders with accurate and reliable numbers, full disclosure of option plans would be better for investors than expensing of ESOs (IESOC, 2002). Tyson (2002:14) felt that expensing of ESOs would make financial statements more misleading. Instead, she believed that disclosing information about ESOs plans would provide enough information to users of financial statements to assess the cost of ESOs. The reason is that she was of the opinion that share prices move in response to disclosure of information on ESOs and that investors would therefore make appropriate adjustments themselves. (Tyson, 2002:14.) Similarly, Moreland (2002) observed that profits on option exercises are already reflected in Form 4 filings in the United States and the equivalent in other countries. He reasoned that such information provides the market with adequate data regarding the compensation packages executives are receiving (Moreland, 2002). Derieux (1994:41) concluded by saying "it is the combination of the speculative nature of measurement and questionable effects of recognition that results in the conclusion that disclosure is preferable to recognition".

Such proponents implicitly believe in the so-called "efficient-market hypothesis" described by authors such as Fama, Fisher, Jensen & Roll (1969), Fama (1970), Ross *et al.*, (2001) and Rubenstein (2001). In essence, the theory states that provided all the necessary information is disclosed to investors, they will calculate the true economic profit of a company which will be reflected in the share price. Thus, even if a firm ignores the ESOs as an expense in its financial accounts, the market will not and it will factor such information into the share price (Economist, 2002). As a matter of fact, Dechow, Hutton and Sloan (1996:16 & 19) found no equity price reaction to the issue of ED E-124 in 1993 by the FASB nor to the decision to rescind its requirements, suggesting perhaps that investors had already taken the cost of ESOs into account in the share price. Similarly, Michel and Garwood (2002:10) found that provided there is disclosure, the market is indifferent as to the accounting rule for ESOs. Thus, the non-expensers feel that if investors are able to compute the cost of

ESOs despite them not being recognised, there seems no reason why the recognition model should be used in addition to the disclosure model. However, it is felt that if disclosure is preferable to recognition, why should ESOs be singled out and be allowed a disclosure alternative as opposed to recognition? Surely, entities should also be allowed to disclose and not recognise the effects of provisions and depreciation amounts due to their potential distortion of income? If so, it would be a very subjective and arbitrary exercise of deciding which items should be recognised and which items should be disclosed. Rather, for consistency all items should be recognised in the financial statements, whether their valuation may be subject to inaccuracy or not. In any event, if the market is able to compute the correct value of ESOs, they should not be misled by inaccurate accounting numbers. Consequently, it is felt that the non-expensers' arguments are unfounded.

### **3.5.6. Expensing share options will hurt young businesses and will have severe economic consequences**

The non-expensers argue that the expensing of ESOs would harm start-up firms and cut-off the entrepreneurial activity of growing firms. The logic is that new, entrepreneurial firms do not always have the cash to attract and retain corporate skills. Instead, such firms can use ESOs to attract and retain corporate talent by offering these people higher payments in the form of ESOs as opposed to lower cash salaries. (Malkiel & Baumol, 2002:A18.) The cash saved thereby, can be employed elsewhere in the business. Furthermore, if ESOs are not reflected as an expense, this would result in higher returns from investments being recognised in corporate accounts. This in turn would make such companies' balance sheets look far stronger allowing them greater access to capital than they would have had, had they expensed ESOs. (Moreland, 2002.) Therefore non-expensers like James F. Morgan of the National Venture Capital Association, felt that expensing ESOs would severely prejudice growing and start-up companies in that their access to capital and corporate talent would be stifled (Harvard Business Review, 1994:27).

This was one of the main arguments put forward by the non-expensers in 1994 in opposition to ED E-124. It is no coincidence that 1994 was the same year that saw the beginning of the information technology boom and therefore people like T.J. Rodgers, President of Cypress Semiconductor, argued that expensing ESOs would

hurt information technology companies like Intel, Apple and Microsoft due to earnings pressures induced by ESOs. He felt that this would cause high-growth companies not to grow and discourage small venture-capital investments from being established. In his opinion, this would result in less job creation and disaster for the US economy. (Harvard Business Review, 1994:27.) How ironic that it was the very non-expensing of ESOs which engendered the creation and subsequent burst of the share market bubble of 1995-2000, causing disaster for the US economy. This is explained in further detail in paragraph 3.6.3.

Finally, Ciccotello and Grant (1995:73-77) illustrated how the use of option-pricing models per ED E-124 would impact smaller emerging companies much more severely than large established companies with long operating histories. This in turn could impact on analyst ratings for such companies, resulting in smaller companies being comparatively undervalued, causing the incentive for people to start new companies to be stifled (Ciccotello & Grant , 1995:73-77). This argument presumes that analysts are unaware of the uncertainties and limitations of financial statements and compare small and large companies on the same footing. This is most inaccurate as most analysts make their own adjustments to the existing financial statements and would not allow accounting numbers to impact on their ratings of companies.

### **3.5.7. Treat the cause of the malady rather than the symptoms**

The non-expensers agree that over the past number of years there have been abuses in the utilisation of ESOs. However they feel that one should rather target the abuses than the instrument itself. (Malkiel & Baumol, 2002:A18.) Many authors (Merritt & Borders, 2000; Harvard Business Review, 1994:27; Ciccotello & Grant, 1995:77; EESOC, 2003:2) concluded that the expensing of ESOs would affect ESOs directly, resulting in a reduction in their use. Similar arguments were reported by Harlan (1994:A8) and Berton (1994) in the Wall Street Journal. In two strong articles against the expensing of ESOs, both Moreland (2002) and Livingston (2002) declared that the regulators should rather treat the malady rather than the symptoms of ESOs. They felt that ESOs themselves were not the root cause of the corruption scandals at Enron and WorldCom and that ESOs on their own are not innately dangerous tools. Rather, they noted that the cause of ESO abuses was due to a lack of corporate governance due to indiscriminate grants by the board of directors. Instead, they

suggested that it is the board of directors that needs reform in terms of corporate governance and there should be no indictment against ESOs as part of an employee's compensation package. They concluded that the ESO debate should be focused on corporate governance and not on accounting, and instead, legislation regulating the use of ESOs should be passed. (Moreland, 2002; Livingston, 2002; Derieux, 1994:41.) Perhaps, Paul Livingston, President and CEO of Financial Executives International, best summarised the argument when he said that "the problem [of abuses of ESOs] should be solved through stronger governance provisions, not the accounting model used as a Trojan horse" (Livingston, 2002).

Similarly, both Tyson (2002:14) and Brumberg (2002) agreed that ESO plans need to be structured differently to make ESOs reward long-term performance resulting from improved company fundamentals rather than share market trends. However, Tyson (2002:14) warned that by tarnishing options directly and having them expensed in financial statements, attention is being diverted from the real problems which relate to their use, not their fundamentals. Therefore, the non-expensers conclude that expensing ESOs will not prevent ESO abuses. Rather they feel that only by implementing better corporate governance controls and restructuring the ESO schemes to be performance related, will ESO abuses cease. Consequently, they maintain that although the current accounting treatment has its flaws, it still reflects the realities of the ESOs far better than the proposed alternatives.

This argument of the non-expensers does not solve the accounting problem of whether or not to recognise ESOs in the financial statements. Focusing on corporate governance and option-granting procedures may result in ESOs being structured more correctly and granted less indiscriminately, yet the financial statements will still not reflect the true profit of companies. This will still leave a loophole in the financial accounting framework, allowing companies to grant off-balance sheet compensation to its employees. Furthermore, their argument that ESOs are the symptoms and not the cause of the malady is strongly opposed by the fact that it was the very non-expensing of ESOs that engendered the abuse thereof and the distortion of companies' financial results.

### 3.6. ARGUMENTS IN FAVOUR OF EXPENSING ESOs

As early as 1961, Campbell (1961:52-54) expressed his outrage about the fact that ESOs were not being expensed in corporate accounts. More recently, support for expensing has been emanating from both the IASB and the FASB (FASB, 2002b; Rouse & Barton, 1993:69). In fact on 13 February 2002, Senator Carl M. Levin, a staunch supporter of expensing ESOs as far back as 1992, introduced a bill to deny a corporate tax deduction to US companies in the year of exercise, unless the same amount was charged to the income statement for accounting purposes (Frederick W. Cook & Co., Inc, 2002:1; Dechow, Hutton & Sloan, 1996:3). Other supporters of expensing ESOs include Federal Reserve Board Chairman Alan Greenspan, Senator John McCain of Arizona, legendary investor Warren Buffet and most institutional investor groups (Brown & Katsanis, 2002). In fact in the United States, companies like Coca-Cola, Amazon.com, General Electric, General Motors, the Washington Post and Level 3 have recently voluntarily adopted the expensing alternative prescribed by SFAS 123 (Rosen, 2002a). A similar trend is being observed in Canada as well (Anderson, 2002). Arguments put forward by the expensers are presented below.

#### 3.6.1. The cost of employee share options represents an expense

As mentioned in paragraph 3.5.2, some argue that because ESOs do not result in a company sacrificing any cash or other asset, they do not represent a cost to the company. However, Nysetvold and Clark (2000) correctly argued that paying for goods or services with a share option is in substance no different than doing so with cash. The reason is that the liability holder would not have accepted the share option as an instrument of payment if it had no value. By offering share options to an employee in exchange for his services, the company is implicitly using the share options to pay for the employee's services. Thus these authors concluded that ESO awards are forms of compensation and should be recorded at their fair value in the financial statements. (Nysetvold & Clark, 2000.)

Greenspan (2002) supported this when he said that in order to determine a company's profit, the value of output less the value paid for the input resources is required to be measured, irrespective of the instrument used to acquire the input resources. SFAS 123 suggests that although ESOs cannot be traded and have

restrictions inherent in them, it does not mean that they are valueless. On the contrary, the grant is made to acquire the services of the employee, which has a value equivalent to the cash or other payment required to acquire such services. Thus, SFAS 123 contends that by not recognising share options as an expense, it implies that either the share options were granted for free to the employee or that the employee's services, which created valuable output for the company, were free. Both of these assumptions are contrary to the economic reality. (FASB, 1995:paras. 76-77; Greenspan, 2002.) In summary, these authors have correctly stated that to pay an employee with a different financial instrument does not detract from the underlying economic fundamentals of the compensation transaction. For consistency, the two transactions must be accounted for the same and compensation paid with ESOs must be recognised in the financial statements.

Greenspan (2002) declared that existing shareholders most definitely consider the potential dilution of their holding to have a cost to them. However, as demonstrated in paragraph 3.5.1, it is submitted that the potential dilution is not the cost of ESOs, but rather an economic effect to the individual shareholder which need not be recognised in the financial statements. Anderson (2002) pointed out that the cost of ESOs is the amount that the company has forfeited by agreeing to issue its shares for less than their fair value in order to satisfy the option holder. He quoted Bob Lavery, CEO of Winnipeg-based packaging company, Winpak Ltd, in which he best summarised the point by saying

“if someone gets \$100 million, someone loses \$100 million. And that someone is either the shareholders or the company itself, which could have sold those shares and put the money in its own treasury”. (Anderson, 2002.)

Similarly, Bodie, Kaplan and Merton (2003:64) argued that a share option is a valuable financial instrument to the holder thereof. By the company issuing it to the employee in exchange for his services, the company is forgoing the cash it could have received in exchange for such options from underwriters (i.e. the option premium). It is the forgoing of the opportunity of the company to receive cash from underwriters, which is the cost to the company of ESOs. (Bodie, Kaplan & Merton, 2003:64.) As mentioned in paragraph 3.5.2, the entity is not recognising an opportunity cost *per se*. Rather the economic nature of the ESO is that its value and therefore its cost to the company, is equal to the opportunity cost of issuing the

underlying shares at the exercise price as opposed to the fair value. The present value of such opportunity cost is equal to the option premium the company could have received had it issued the options for cash to underwriters.

Finally, empirical research is available which supports the idea that ESOs are an expense. In a research paper done by Aboody, Barth and Kasznik (2001:2-3), they found that share-based compensation has an inverse relationship between the company's share price, indicating that investors perceive this as an expense. The data used in their study comprised 534 firms included in the Standard and Poor's mid-capitalisation and small capitalisation indices from 1996 to 1998. Consistent with their price-based findings, these researchers found a significant negative relationship between movements in share prices and changes in share-based payments, indicating that the perceived cost of share-based payment expense is reflected by investors in the share price. (Aboody, Barth & Kasznik, 2001:2-3.) This demonstrates that ESOs are a cost and were reflected in the share price. It is absurd to think that ESOs should not be recognised in the financial statements which is the main source from where share prices are determined.

### 3.6.2. Employee share options do meet the definition of an expense

ED 2 controverts the notion that ESOs do not meet the definition of an expense. It states that when a person provides services to his employer, the services received by the employer are initially an asset. This is in line with SFAC 6 which states that when a service is received by a company, the company initially controls an asset since services are economic resources. Thereafter the service assets can either be immediately consumed or used in the creation of other assets. However, this does not detract from the fact that services are assets initially albeit momentarily. Therefore, if the company purchases an employee's services for cash or ESOs, the journal entry should be as follows:

Dr. Service assets	X	
Cr. Bank or ESOs		X

Being the acquisition of services.

As and when the services are used up or depreciated (which is often immediately), the service assets are consumed. The journal entry for the consumption of the service assets would be as follows (assuming the services are fully consumed):

Dr. Services expense	X
Cr. Service assets	X

Being consumption of service assets.

---

Therefore, if a company compensates its employees with ESOs, the ESO transaction meets the definition of an “expense” since the ESO transaction causes a decrease in economic benefits to the company since the acquired service assets are consumed which decreases the company’s equity. (IASB, 2002a:paras. BC42-BC48; FASB, 1985:para. 31.) This proves that the ESO transaction does meet the definition of an “element” of financial statements and therefore disproves the comments of the non-expensers that ESOs are capital transactions that do not meet the definition of an expense.

The FASB echoed similar sentiments and stated that the reason why people think there is no “using up of an asset” when it comes to the payment of services is because accountants often apply a shortcut method and simply record an expense for the services acquired instead of first capitalising the services as an asset and then expensing them (FASB, 1995:para. 88 footnote 14). By applying the journal entries correctly, the expense definition is satisfied when an employee is compensated with ESOs.

### **3.6.3. The current accounting treatment has adverse economic consequences and overstates earnings**

As illustrated in paragraphs 3.6.1 and 3.6.2, ESOs impact on the financial resources of a firm. Consequently, the expensers declare that failure to subtract this compensation cost from pre-tax profits increases reported earnings, distorts financial statements, overstates the share price and encourages the misallocation of capital within financial markets (Tyson, 2002:14; Grant & Ciccotello, 2002:37). The reason is that the non-expensing of ESOs misleads potential investors as to the true input costs for generating the firm’s revenue. This in turn causes the markets to overestimate the value of a company or venture, causing resources to flow



mistakenly in the wrong direction. This was part of the cause of the share market bubble of 1995 to 2000. During this period, many US companies (including information technology companies) compensated their employees with fixed ESO plans simply because they did not require expense recognition in terms of APB 25. Such companies reported inflated earnings figures that failed to take into account the true input costs of generating the company's revenue streams since ESOs were not expensed. Unaware of how misleading such numbers were, investors used such figures in their forecasts to value such companies thereby inflating their share prices, contributing to the short-run phenomenon of the share market bubble of 1995 to 2000. The subsequent burst of the share market bubble in 2001, causing share prices to plummet to realistic levels, has shown that markets can only allocate resources efficiently when prices accurately reflect underlying values. This can only be achieved by expensing ESOs as this shows the investor the true costs of a venture or firm. (Stiglitz, 2002; Greenspan, 2002; Baker, 2000; Manitou Investment Management Ltd, 1999:1-5; Casey, 2002.) In fact, Greenspan was quoted as saying that "for him, the issue of share options is not just one of accountability, but one of financial stability" (Thompson, 2002). Bill Miller, a fund manager at Legg Mason Inc. in Canada, went so far as to suggest that due to the rampant distortion of corporate earnings that ESOs engender, they should be permanently outlawed as a form of compensation (Anderson, 2002). Contrary to the sentiments expressed by the non-expensers, the non-recognition of ESOs has had severe economic consequences and instead of causing more motivated employees, it has misrepresented the financial results of companies and caused billions of dollars to be lost by investors due to plummeting share prices as a result of the bursting of the share market bubble.

The above assertions are supported by numerous research regarding the effect that not expensing ESOs has had on reported earnings. Most of the research mentioned is based on valuing ESOs using the Black-Scholes option-pricing model. Anderson (2002) observed how Intel Corporation's 2001 earnings would have been reduced by 80% had it been forced to deduct the cost of its ESOs each year. This demonstrates the enormous magnitude of the distortion caused by eliminating ESOs from the financial statements. Likewise, Canadian company, Cognos Inc, would have reported a loss of \$6.1 million instead of a profit of \$19,4 million in the 2002 fiscal year had it

expensed its ESOs (Anderson, 2002). In fact Border (2002) and Vaknin (2002) cited the Federal Reserve Board as estimating the effect of non-expensing as having caused average earnings growth in the United States to be inflated by three percent. Bodie, Kaplan and Merton (2003:64) emphasised the point that had AOL Time Warner reported ESOs as an expense in the income statement in 2001, it would have disclosed an operating loss of \$1,7 billion, rather than the \$700 million operating income it actually reported. Once again this is a material amount which no doubt affected this company's share price. Thompson (2002) cited an analysis by the *USA Today* of the 50 largest US companies in the Standard & Poor's 500 which found that earnings for these companies in 2001 would have dropped by 10% had they accounted for ESOs as an expense. Furthermore, such companies used the section 83 tax deduction allowed by the Internal Revenue Code to cut their tax bills by an estimated \$10.1 billion (Thompson, 2002). This research demonstrates the misrepresentation caused by not expensing ESOs. This is perhaps the real reason why US companies were so vociferous against the expensing of ESOs in their financial statements. They were quite content with the status quo and did not want accounting standards interfering with their "free-lunch". Arguments that the expensing of ESOs would destroy the motivational effects of ESO instrument were merely a front for companies wanting to retain the accounting exception and exploit it as much as possible.

In 2002, HSBC Bank of the UK intended charging the cost of ESOs to earnings. The bank admitted that the cost of such expense would have amounted to £81m in the first six months of 2002. (AccountancyAge.com, 2002.) Similar views were expressed in Australia and South Africa in that reported profit levels of companies in both these countries would be substantially reduced should they adopt the requirements of ED 2 and recognise ESOs as an expense (Priest, 2002; Kemp, 2002b). Even White, Sondhi and Fried (2003:440), the primary reading material for the Certified Financial Analyst examination, stated that failure to recognise ESOs as an expense overstates corporate performance. This is why the expensing of ESOs is such a thorny issue amongst companies because expensing of ESOs will wipe out large amounts of their reserves which they have falsely reported due to the accounting loophole caused by ESOs.

ESOs.

It would seem that it is not only the accounting in corporate accounts that has resulted in an understatement of costs, but also the figures used in the national accounts may have been understated. Morrissey (2000:6) noted how in the United States the Bureau of Labor Statistics does not include the cost of ESOs in its quarterly Employment Cost Index. By not including such costs in the Employment Cost Index number, this would ultimately have affected the monetary policy of the Federal Reserve. This further illustrates the distorted nature of ignoring ESOs as compensation costs.

#### **3.6.4. The issue of share options is not a capital transaction**

As mentioned in paragraph 3.5.3, some respondents to the IASB and the FASB pointed out that the issuance of an ESO is a capital transaction between shareholders, which does not give rise to an expense because the entity is not a party to the transaction. They feel that the dilutive effect of ESOs is a transaction between the existing shareholders and the future employee shareholders in terms of which an ownership interest will be transferred. (IASB, 2002a:para. BC29; FASB, 1995:para. 90.)

ED 2 rejects this argument on the grounds that it is the *company*, **not** the shareholders, that issues ESOs in exchange for services rendered by the employee. Therefore the company should account for the services received in return for the ESO instruments issued. It concludes that this, in substance, is no different from the issue of a normal share purchase warrant (or any other equity instrument) in exchange for cash. With the issue of a share purchase warrant for cash, the company receives resources (cash) for the options and further resources (cash) upon the exercise of these options. So too with the issue of ESOs for services, the company receives resources (employee services) in exchange for the issue of the ESOs and further resources (cash) for the issue of shares upon the exercise of the ESOs. (IASB, 2002a: para. BC30.) A very similar conclusion was reached by the FASB in 1995 (FASB, 1995:para. 90). Therefore, ESOs cannot be considered capital transactions since it is the company, not the shareholders, that issues them and they are economically equivalent to the employee subscribing for the ESO instrument in exchange for his services. To be consistent with the accounting treatment of the

issue of shares for cash, the entity must also record the issue of ESOs for employee services in a similar manner.

### **3.6.5. The cost of employee share options is not recognised in diluted earnings per share**

The IASB noted the argument given by the non-expensers that by expensing ESOs, diluted EPS was being “hit twice”. The IASB divided the transactions surrounding ESOs into two. Firstly, the company compensates the employee for his services in exchange for ESOs. Thereafter, at the exercise date, the company (the option writer) settles the ESOs by issuing its shares at the exercise price. The payment for the services with ESOs and the subsequent consumption (or depreciation) of such service assets affects earnings (numerator of the diluted EPS calculation) and the issuing of the shares in the future in terms of the option contract (when they are “dilutive potential shares”) affects the number of shares for the diluted EPS calculation (denominator of the diluted EPS calculation). (IASB, 2002a: paras. BC49-BC52.) Thus, the so-called “dual effect” on diluted EPS is not double counting, but rather recording two different economic events. By only disclosing the dilutive effect of ESOs, one of the transactions surrounding ESOs is being omitted. Consequently, the use of the diluted EPS number does not fully recognise the cost of ESOs in financial statements.

The G4+1 Paper notes how expensing ESOs reflects the economic consequences of ESOs far better than non-expensing. It states that had the entity paid cash for the employee’s services, only the numerator of the EPS calculation would have been affected, but not the denominator. The company could prevent a decrease in its EPS by simply increasing its revenue streams to offset the charge to the earnings figure (the numerator) for the employee’s services purchased and consumed. However, when the employee is paid with ESOs instead of cash, not only is the company required to increase earnings (the numerator) to maintain its EPS, but it must also increase earnings by a far greater margin so as to offset the dilutive effect caused by the increase in the denominator due to the future issue of the shares to settle the ESOs. (IASB, 2000: paras. 3.21-3.22.) Thus, by not expensing ESOs, the EPS number becomes more distorted since the numerator is understated and it does not facilitate the correct comparison of the diluted EPS of a company that compensates

its employees with ESOs, to a company that does not compensate its employees with ESOs.

Finally, Bodie, Kaplan and Merton (2003:69) pointed out that even if we assume that diluted EPS does reflect the economic consequences of ESO grants, there are other performance measures like return on assets, return on capital employed and economic value added, which depend on accounting earnings, and by not expensing ESOs these ratios are concomitantly distorted. These authors felt that such ratios are a far better estimate of the economic value of a company compared to the diluted EPS number. Consequently, they held that failure to expense ESOs distorts these financial ratios. (Bodie, Kaplan & Merton, 2003:69.)

### **3.6.6. Disclosure alternative is not a substitute for recognition**

Many respondents to ED E-124 contended that improved disclosure about ESOs in the notes to financial statements was as good as recognising ESOs as an expense in the income statement. They felt that with disclosure, users have all the information necessary to make economic decisions and therefore recognition of ESOs as an expense is redundant. (FASB, 1995:para. 103.)

The IASB Framework clearly states that the failure to recognise an element (i.e. an asset, liability, equity, income or expense) in the income statement or balance sheet that meets the definition of an element is not rectified by the disclosure of explanatory material (IASC, 1989:para. 82). Similarly, FASB Statement of Financial Accounting Concepts No. 5 (SFAC 5) – *Elements of financial statements* concludes that disclosure of information without recognising the item is not a substitute if the item meets the recognition criteria (FASB, 1984:para. 9). Accordingly, because ESOs meet the definition of an expense and they are either equity or liabilities (refer to Chapter 4 (para. 4.5)), they should be recognised in the financial statements since they satisfy the requirements of at least two “elements”.

SFAS 123 emphasises the fact that disclosure and recognition are not equivalents. Firstly, it states that items like provisions, depreciation and warranties, which all require estimates but meet the definition of an element of one form or another, are still recognised in the financial statements, although their accuracy is subject to debate. Thus, ESOs should also be recognised since the precision of their value is

also not entirely accurate. In addition, it contends that by only disclosing information on ESOs and not expensing them, this permits only the most sophisticated investors to estimate the actual impact of recognising full compensation cost through the income statement. Furthermore, even the most sophisticated investor would not have access to all the information at the disposal of the company itself to make an accurate estimate of unrecognised items. (FASB, 1995:paras. 104-105.) Although the market may in certain instances be able to factor in a cost for ESOs based on the disclosure thereof, such cost is merely an estimate which will differ from analyst to analyst and some analysts may not even factor in a value for the ESOs at all. The people who can make the best calculation of the cost of ESOs is the company itself. Therefore, it is appropriate that the company recognises the cost of ESOs which allows the users of financial statements to at least work from a firm basis on what the cost of ESOs is.

In fact, SFAS 123 mentions that the FASB allowed the disclosure model as an alternative accounting model, not because it believed in this method, but rather “to bring closure to the divisive debate on this issue” (FASB, 1995:para. 62). In other words, the FASB admitted that it does not approve the disclosure model for ESOs and only permitted it in SFAS 123 as a result of the political pressure placed upon it in 1994. However, the IASB seems to have learned from their American counterparts and the recently issued ED 2 does not permit a choice between a disclosure model and a recognition model for ESOs. The IASB felt that by giving a choice between recognition and disclosure, this causes a competitive disadvantage to entities that expense their ESOs, thus negating one of the cardinal principles of accounting, namely comparability. (IASB, 2002a:para. BC277.) This is because under SFAS 123 a company can opt for the benchmark treatment and recognise the cost of ESOs whereas another company can adopt the allowed-alternative treatment and recognise no cost for the ESOs. This does not facilitate comparability between the two entities.

Bodie, Kaplan and Merton (2003:68) pointed out a practical problem caused by allowing a choice between recognition and disclosure. They noted how investment analysts and users of financial statements often will use electronic databases to calculate financial statement ratios. To make adjustments for companies that have note disclosure as opposed to recognition entails costly adjustments to the standard financial ratios used for most companies. (Bodie, Kaplan & Merton, 2003:68.)

Because of this, users of financial statements have tended to ignore the cost of ESOs even though it was disclosed in the notes to the financial statements. In order to level the playing fields, these authors suggested that all compensation should be recognised as an expense. This was also expressed by the then FASB Vice-Chairman, James J. Leisenring in the 1994 hearing regarding ED E-124 (Journal of Accountancy, 1994b:20).

Academic research exists to support the fact that disclosure consequences are different from recognition. In a research paper conducted by Espahbodi *et al.* (2002), these authors examined the share price reaction to the pronouncements relating to accounting for share-based compensation and assessed the value relevance of recognition versus disclosure in financial statements. Their results indicated that US firms (especially high-tech, high-growth and start-up firms) exhibited significant abnormal returns around the issuance of ED E-124 proposing to require recognition of share-based payment costs, and also around the event reversing that decision to require only a disclosure model while encouraging a recognition model. The implication of the above results is that market participants value disclosure and recognition differently. (Espahbodi *et al.*, 2002:345.) This supports the FASB and IASB's sentiments that disclosure is no substitute for recognition. The proof is that if disclosure were equivalent to recognition, requiring companies to disclose the cost of ESOs rather than mandating recognition thereof would have involved no new information and should not have affected share prices.

Similarly, Barth, Clinch and Shibano (2002) mathematically demonstrated how the recognition of an accounting amount, as opposed to only disclosure thereof, affects price informativeness and therefore the share price. These authors revealed that price informativeness is a function of the recognised amount, disclosed information, information revealed by the price and accounting expertise acquisition. By recognising an accounting amount as opposed to only disclosure thereof, this alters this mathematical relationship and causes a consequential effect on the share price. The reason is that separate recognition increases price informativeness because information is now freely available to *all* investors and not only to accounting experts who understand the disclosure. (Barth, Clinch & Shibano, 2002:2-3 & 28-29.)

Such research has implications for the efficient market hypothesis. It implies that investors may be misled by reported profits that exclude the cost of options. Perhaps, this supports writers like Findlay and Williams (2001), Daniel and Titman (1999) and Dreman (2001) who criticised the efficient market hypothesis and stated that investors who do in fact know the true economic value of ESOs do not necessarily drive out investors who are ignorant. This is most evident from the fact that the share-market bubble of 1995 to 2000 actually occurred – if investors fully appreciated all the accounting information disclosed in the notes, a share market bubble should never have occurred since investors would not have been misled by inflated earnings numbers. The fact that the share-market bubble did occur, proves that investors can be misled by inaccurate accounting numbers and they did not factor in the ESO numbers disclosed in the financial statements.

Furthermore, the expensers concluded that the arguments of the non-expensers are contradictory. If the non-expensers feel that disclosure is equivalent to recognition, it should make no difference to them whether or not ESOs are expensed because according to them, the market has already determined the “true” economic cost of ESOs in the share price and therefore whatever accounting cost is recognised for ESOs is irrelevant. (Stiglitz, 2002; Bodie, Kaplan & Merton, 2003:69; Greenspan, 2002.)

Further support for the fact that disclosure is not a substitute for recognition was given by Balsam, Mozes and Newman (2003:32) who found that users generally placed less emphasis on financial information disclosed in the notes. This was evident from SFAS 123 which allowed companies to disclose the pro forma impact of ESOs on earnings in a footnote. These authors found that the pro forma net income (after adjusting for the effect of outstanding ESOs) did not receive the same publicity as the actual earnings and it was not used in calculating price/earnings and other financial ratios. These authors also found that US companies did not manage the pro forma ESO expense under SFAS 123 properly. Instead, such companies would manipulate the pro forma ESO expense required by SFAS 123 to increase perceptions of their profitability. (Balsam, Mozes & Newman, 2003:31,32 & 44.) Users of financial statements are therefore subconsciously biased and only consider the numbers within the actual financial statements and tend to ignore supplementary information. To allow them to use the correct figures, ESO cost must be recognised in



the actual financial statements. This was also supported by Bodie, Kaplan and Merton (2003:68) who found that executives and auditors did not put the same effort and diligence with disclosure, compared to numbers recognised in the primary financial statements.

Consistent with previous sentiments, the IASB concluded that if recognition together with disclosure is required for all other contentious expense items, no exception should be made to ESOs (IASB, 2002a:para. BC274). In fact, ED 2 notes the views of the following respondents:

- (i) Users' responses to the G4+1 Paper.
- (ii) A 2001 survey by the Association for Investment Management and Research of analysts and fund managers.
- (iii) Public comments by users of accounts, such as those reported in the press and at US Senate hearings.

All these respondents were in favour of a recognition model rather than a disclosure-only model for ESOs. Consequently, the IASB declared that recognition of ESOs rather than only disclosure thereof is paramount for meaningful financial information to be conveyed to users of financial statements. (IASB, 2002a:para. BC276.)

### **3.6.7. The argument that the cost of employee share options cannot be estimated reliably is weak**

Another reason raised by the non-expensers for not recognising ESOs is that it is not possible to calculate the ESO expense reliably. The expensers controvert such argument on two fronts. Firstly, Aboody, Barth and Kasznik (2001:3) found a significant inverse relationship between share-based compensation expense and share price, which indicates that investors are able to reliably measure such expense with sufficient accuracy. Secondly, although the Black-Scholes model may overvalue the value of options, it is by no means the only option-pricing model nor does it mean that the model cannot be adjusted to reflect the differences between ESOs and traded options. As illustrated in Chapter 4 (para. 4.4.2.3), today there exists a large body of option-pricing models which have been specifically developed for valuing ESOs. The Black-Scholes model is by no means the only valuation model and companies may choose from a wide range of option-pricing models to value their

ESOs for financial reporting purposes. In addition, the expensers argue that although such option-pricing models provide only estimates of the actual value of ESOs, the reporting of an estimate for the value of an ESO is not objectionable. They note that accounting often involves making estimates. For example, material estimates are made for the collectability of doubtful debts, the useful life of fixed assets and the pattern of their consumption, and for employee pension liabilities. To them, making such estimates does not detract from the reliability of financial statements. (IASB, 2002a:para. BC280.) In fact, users of financial statements are aware of the limitations of financial statements and in any event, the bases for estimates are subject to an external audit and are usually disclosed in the financial statement notes. Greenspan (2002) noted how very material amounts of income and expenditure are recognised in the financial statements which are as a result of changes in the valuation of items which depend on the outcome of forthcoming events, which by their very nature are uncertain. Thus, it is absurd to state that ESOs cannot be recognised because of measurement uncertainties.

ED 2 states that when estimating the fair value of options, the objective is to measure the fair value at the *measurement date*, and **not** the value of the underlying share at some future date. The valuation does not attempt to estimate the future gain of the ESO holder. Rather, only the amount that a third party would pay to obtain the right to participate in any future gains is measured. Consequently, even if the option expires worthless or the employee makes a large gain on exercise, this does not mean that the grant date estimate of the fair value of that option was necessarily unreliable or wrong. (IASB, 2002a:para. BC279; Campbell, 1961:57.) Further aspects regarding the IASB and FASB's arguments relating to "reliability" of measurement and the use of option-pricing models for valuing ESOs is amplified upon in Chapter 4.

The FASB contended against the argument that the cost of ESOs is never trued up to the actual gain made by the employee upon exercise of his ESOs. It argued that in the case of a normal expense, although the total amount of such expense, which is ultimately paid in cash equals the total amount accrued to each period, the appropriate amount attributable to any individual year is never trued up. The reason is that the precision of the reported total liability cannot be determined with exact accuracy at any date while it is being incurred. And any change in the value of the liability attributable to the expense recognised in respect of a prior period is not

adjusted against the expense recognised in prior periods but rather is accounted for as a change in accounting estimate accrued in the period of change. In any event, by the time the liability and the expense are trued up to the eventual cash payment, users have already made the economic decisions based on the estimated amounts. Therefore to state that ESOs cannot be recognised simply because they are never trued up must apply equally to annual estimates like post-retirement benefits, provisions and contingent liabilities. (FASB, 1995:para. 113.) In order to treat ESOs consistently with other transactions, they must be recognised as an expense. ED 2 notes that by not recognising ESOs, it effectively means they are recognised at zero which does not solve the problem of truing up. Instead, it compounds the problem since there is still a permanent error embedded in the accounts in that the cost of ESOs is vastly understated. (IASB, 2002a:para. BC283.) This further misleads the user since a cost of zero is charged for the compensation paid to the employees for their services which is ridiculous.

### **3.6.8. The argument that expensing employee share options will have adverse economic consequences is unfounded**

One of the major arguments put forward against expensing ESOs is that this would destroy the use of ESOs as a compensation tool. The G4+1 Paper refuted this notion by stating that if an accounting statement favours a certain transaction simply because it is not recorded in the financial statements, this may result in enterprises favouring the transaction, not necessarily because it is economically sound, but rather because it offers the most favourable accounting treatment. Although in the short run such favourable accounting treatment may cause artificial growth in the relevant economic transaction, in the long run this will lead to economic distortion. The reason is that because the accounting numbers are inaccurate, investors are under an illusion as to the true value of the relevant transaction. This impairs the quality of financial reporting, which eventually harms investors, capital markets and the economy. (IASB, 2000:para. 3.25.) This viewpoint was also expressed by the FASB in 2003 (Herz, 2003:3). As illustrated in paragraph 3.6.3, the non-expensing of ESOs did indeed cause an upsurge in the number of ESOs being granted yet this resulted in inflated earnings and artificial growth that was reflected in over-valued share prices during the 1995 to 2000 share market bubble. Therefore, by not expensing ESOs in the financial statements, it merely results in a distortion of

economic reality, causing investor capital to flow into non-profitable investments, causing harmful economic repercussions.

SFAS 123 states that accounting on its own must never affect economic decisions, as accounting must present the economic consequences of transactions faithfully. Economic decisions must be based on a cost versus benefit payoff. Hence any potential decline in the use of ESOs due to the expensing thereof would not occur as a result of accounting, but rather as a result of users perceiving the cost of ESOs as being higher than the cost of normal wages. (FASB, 1995:para. 84.) However, by not expensing ESOs, users are merely deluding themselves of economic reality. In fact, Mary E. Barth, a renowned writer on the subject of ESOs, noted in 1994 that changing financial reporting standards does not and cannot change the economics of existing transactions. Rather it only means that these transactions will be reflected in the financial statements. (Harvard Business Review, 1994:34.)

Herz (2003:25) correctly pointed out that by expensing ESOs, option plans will be chosen based on their economic fundamentals and not on the basis of biased accounting rules. This will allow ESO plans which are closely linked to performance to be granted, resulting in positive economic effects which will help alleviate the agency problem (Herz, 2003:25). Thus, in the United States, this would result in variable option plans, which are linked to performance, to be more widely used as opposed to fixed option plans being chosen solely because of their biased accounting treatment under APB 25. Therefore, by requiring companies to expense ESOs, the true nature of their cost will be revealed and they will be able to compete on an equal footing with companies that make use of other compensation tools like cash bonuses (Bodie, Kaplan & Merton, 2003:64). Similarly Towers Perrin (2002:4) felt that where options continue to provide incentives relative to their cost, they would continue to be utilised as incentive tools. However, where the incentive benefits from options are weak compared to their cost, companies would tend to use other incentives like cash bonuses or share allocations (Towers Perrin, 2002:4). The expensing of ESOs would not cause companies to abandon the use of ESOs *per se*. Rather, because the cost of ESOs is now reflected in the financial statements, companies will now structure ESO plans more efficiently and grant them sparingly so as to incur the least cost. Contrary to the arguments of the non-expensers, this would improve corporate performance and avoid ESO abuses. In fact, any ESO plan whose cost is less than

the alternative cash compensation, would have to be performance-based and would thereby solve the company's agency-problem better than the cash compensation. Casey (2002) quoted Professor Brian Hall of Harvard Business School as stating that retaining the accounting exemption of not expensing ESOs is an "externality" which creates market inefficiency in that it distorts the attractiveness of options over other forms of compensation, even though these may offer more powerful performance incentives.

Both ED 2 and SFAS 123 note that the role of accounting is to report transactions in a neutral manner and never to give a favourable or bias accounting treatment to any particular transaction, so as to encourage entities to enter into those transactions. By doing this, profits of enterprises that follow the favourable accounting treatment will be inflated and comparability between enterprises is impaired, as companies who do not pursue the favourable accounting treatment will be prejudiced. (IASB, 2002a:para. BC55; FASB, 1995:paras. 84 & 97.) Consequently, to achieve comparability between companies compensating their employees with ESOs and companies compensating their employees with other incentive payments, ESOs must be expensed.

SFAS 123 also refutes the argument that expensing ESOs will cause a reduction in share prices due to lower earnings. It states that if a company expenses ESOs, it actually reduces investor uncertainty as to the true cost of ESOs, thus reducing the risk premium of investors, resulting in higher share prices. (FASB, 1995:para. 87.) This obviously will occur only after the misinformation and inaccurate earnings caused by the non-expensing of ESOs has been filtered out of the economic system. However, until ESOs have been consistently required to be expensed, the initial expensing of ESOs may cause a reduction in share prices. This is to be expected, since the earnings used in share price valuation were overvalued. To correct the overvalued numbers, earnings must be restated which will have a consequential effect on company share prices.

Finally, Greenspan (2002) argued against the view that expensing ESOs will make raising capital more difficult. He reasoned that not all new capital projects need to be financed. If capital projects are financed due to inaccurate reported earnings, this results in capital being misallocated resulting in destruction of wealth, as was evident

by the US share market bubble of 1995 to 2000. Therefore, he held that by expensing ESOs, investors are more informed about the true input cost of generating corporate revenues, allowing them to allocate capital efficiently and make correct economic investment decisions. He concluded that: “capital employed on the basis of misinformation is likely to be capital misused”. (Greenspan, 2002.) This opinion was supported by Mary E. Barth (Harvard Business Review, 1994:34). Thus, by expensing ESOs, the capital projects in which capital is employed will provide genuine returns as opposed to inflated paper profits caused by not expensing ESOs.

### 3.7. SUMMARY AND CONCLUSIONS

This chapter first explored the development of accounting for ESOs and the current accounting treatment of ESOs in the United States of America, the United Kingdom and the Republic of South Africa. It was found that none of the existing accounting standards consistently required companies to expense ESOs granted to their employees. Recently, the IASB issued an exposure draft called ED 2 – *Share-based payment* which is a comprehensive statement requiring all companies to expense ESOs.

It was found that because ESOs were never required to be expensed, this was one of the catalysts for the unbridled growth and abuse of ESOs over the last decade or so. Consequently, the debate as to whether ESOs should be expensed in company earnings has now reopened since its controversial adjournment in 1995. The debate regarding the expensing of ESOs is a highly politicised and controversial issue. This is mainly due to the material affect that expensing ESOs will have on company earnings. The expensing debate reached such a heated level in the United States that an Act of parliament was promulgated to prevent the expensing of ESOs. The thrust of the debate centres around whether a disclosure-only model as opposed to a recognition model for ESOs is the preferred method. The proponents in favour of a disclosure-only model (the “non-expensers”) argue that the cost of ESOs is already disclosed in the diluted EPS number and any attempt to attribute value to an ESO would be subjective. They also argue that ESOs are an internal transaction which does not meet the definition of an expense. Finally, the non-expensers contend that by expensing ESOs, this would cause companies to stop using ESOs which would hurt young and growing businesses. They feel that a disclosure-only model would be

equally informative to users as a recognition model since investors could extrapolate all the information they needed from disclosure rather than actual recognition. It was found that the main aim of the non-expensers was to retain the accounting loophole and avoid the expensing of ESOs no matter what.

It is concluded that the government, big business and accounting standard setting authorities should be completely independent of one another. As evidenced by the happenings in the United States regarding ESOs, big businesses are able to manipulate and pressurise the accounting standard setting authorities to promulgate biased and weak accounting standards which do not reflect the economic nature of corporate transactions. The only way to prevent this is to have independent and autonomous accounting standard setting authorities. When this occurs, accounting standard authorities will not need to wait for future Enrons and WorldComs to realise their accounting standards are ineffective.

The proponents of expensing ESOs (the “expensers”) refute the arguments of the expensers. They first prove that a close analyses of the ESO transaction reveals that it does meet the definition of an expense. Thereafter, they demonstrate that diluted earnings per share is an inadequate measure of the cost of ESOs since it does not account for such cost in the numerator. They prove that ESOs are not an internal transaction since the employees and the company are separate legal entities and the nature of the ESO transaction is that the entity (not the shareholder) compensates the employee with an ESO instrument. In addition, they contend that by not expensing ESOs, corporate earnings are inflated which misleads investors as to the true economic profit and input costs of the company. Companies tend to favour the use of ESOs as compensation instruments based solely on biased accounting rules as opposed to their motivational effects on employees. They demonstrate that any decline in the use of ESOs resulting from the expensing of ESOs would not be due to investors rejecting ESOs as a compensation tool *per se*. Rather, it would be due to them choosing the appropriate compensation tool which accrues the least cost and provides the greatest benefits. Thus, any accounting distortion caused by not expensing ESOs would be removed which would allow ESOs to be chosen based solely on their economic fundamentals which would curb the number of ESOs being granted *and* cause ESO plans to be structured efficiently. The only way ESOs can compete with other compensation instruments is if their cost can be compared to one

another. Therefore, by not showing a cost for ESOs, it does not facilitate such comparison, allowing ESO grants to be made indiscriminately without account being made for them. They also put forward the argument that if the non-expensers prefer a disclosure model because investors can calculate the correct value themselves, why not still recognise a cost for ESOs as it makes no difference to investors what the number is as they will calculate it correctly themselves anyhow? Finally, they note that although only estimates can be made of the value of ESOs, this does not detract from the fact that such costs should still be recognised in the financial statements, since the estimate process is an integral part of financial accounting.

It is concluded that ESOs do meet the definition of an expense and must be reflected as an expense in corporate accounts. Otherwise, they result in inflated accounting numbers due to companies favouring ESOs on the basis of an accounting exception not requiring their recognition. Only by recognising the cost of ESOs, is there symmetry between the benefits of the services acquired and the cost thereof. This allows companies to compare ventures financed using cash compensation and those using ESOs on equal grounds. This in turn will require companies to structure ESO grants efficiently to accrue the least cost for them. ESOs that cross this hurdle are bound to be performance-based and should solve the company's agency-problem better than cash compensation.

It is contended that the dilution caused by the potential exercise of ESOs is not a cost to the company but rather is a cost to the individual shareholder. Rather, the true economic nature of the ESO transaction is that the company is compensating the employee for his services with a type of call option instrument. Compensating an employee with a different legal tender does not detract from the fact that the ESO transaction is a payment for the employee's services. From the company's perspective (option writer), the ESO represents an obligation upon the company to issue its shares at the exercise price instead of the prevailing market price at exercise date. In other words, the company has an obligation to effectively forfeit in advance, the difference between the future market price of its shares at exercise date and the exercise price and it has used such forfeited proceeds to compensate the employee for his services rendered over the service period. The ESO transaction can also be thought of as the employee subscribing for the underlying shares for *market price* at



exercise date and the company immediately repaying the employee the difference between the market price of the shares at exercise date and the exercise price as compensation. The present value of such forfeited proceeds is equivalent to the option premium the company could have received had it issued the ESOs on the market for cash. This is discussed in more detail in chapter 4 (para. 4.8). However, such obligation is only a potential obligation to the company since it is contingent upon both the fulfilment of vesting conditions as well as the options being in-the-money at the exercise date. Such obligation can also be thought of as being a *potential* opportunity cost to the company since the company is committed to forfeit the potential proceeds it could have received from issuing the underlying shares at fair value. However, the company is not recognising an opportunity cost *per se*. Rather the economic nature of the instrument used to compensate the employee derives its value based on the opportunity cost to the company of forgoing the potential proceeds from issuing its shares at their fair value.

Once the investor has decided as to whether ESOs should be expensed, this lays down the platform for the next chapter: the valuation and measurement of ESOs.

## CHAPTER 4

### MEASUREMENT AND RECOGNITION OF EMPLOYEE SHARE OPTIONS

#### 4.1. INTRODUCTION

Bodie, Kaplan and Merton (2002:A12) asserted that, except for a “few renegades”, there is almost complete unanimity amongst scholars in the fields of accounting and finance in that employee share options (ESOs) should be expensed in a firm’s income statement. However, the question still remains as to how this is to be done.

As mentioned in Chapter 3 (para. 3.5.4), because financial accounting follows the accrual concept, it is necessary to determine the value of the ESO instrument at an interim stage to recognise the value of the ESOs used to compensate the employee as and when his services are performed. Since ESOs are a type of share option, the valuation models developed for the pricing of traded share options are discussed first in this chapter. Thereafter the differences between a traded share option contract and an ESO contract are examined. The salient features of the different valuation methods for ESOs are then explored. The various measurement dates, as well as the classification of ESOs on the accounting equation are considered. Finally, the consequential accounting disposition of ESOs through the financial statements is examined using each of the accounting standards and exposure drafts developed by the Financial Accounting Standard Board (FASB) and the International Accounting Standards Board (IASB).

#### 4.2. OPTION-PRICING MODELS FOR TRADED SHARE OPTIONS

##### 4.2.1. Introduction

The long and illustrious history of the theory of option-pricing began in 1900 when the French mathematician Louis Bachelier deduced an option-pricing model based on the assumption that share prices follow a Brownian motion with zero drift (Merton, 1973:141). Since then, numerous researchers have contributed to his theory. It was in his doctoral dissertation in 1962, that A. James Boness developed elements for a theory in pricing share options. Such theory was published in 1964 in the Journal of

Political Economy and would be one of the pioneering works in the valuation of share options of the 20<sup>th</sup> century.

In his review of option-pricing models, Smith (1976:5) divided option-pricing models into two categories, namely *ad hoc models* and *equilibrium models*. This section looks at the two most famous equilibrium option-pricing formulae, namely the Black-Scholes and Cox-Ross-Rubenstein binomial option-pricing models. This section does not attempt to provide a detailed analysis of option-pricing models but will rather deal with the basic principles underlying option valuation and a brief description of the aforementioned models. Unless stated otherwise, the following paragraphs deal with the valuation of a traded call option from the option holder's perspective and *not* from the option writer's perspective.

#### 4.2.2. Factors affecting call option prices from the option holder's perspective

As mentioned in Chapter 2 (para. 2.6.2.1), one of the determinants of a call option's value is its intrinsic value which is the positive amount by which the fair market value of the underlying share exceeds the strike price of the option. From the option holder's perspective, until the earlier of expiry date and exercise date, call options become more valuable as the share price increases above the strike price of the options and become less valuable as the share price decreases. Therefore, over the option's term, increases in its intrinsic value increase the call option's value. However, the **total value** of a call option is equal to the sum of its intrinsic value and its *time value* (Hull, 2002:168). The *time value* of an option is the value over and above the intrinsic value of the option that the market places on the option. The time value of an option depends on the following variables:

- The time to expiry date.
- The volatility of the underlying share price.
- The risk-free interest rate.
- The dividends expected during the life of the option.

(LIFFE, [S.a.]b.)

*Time to expiry date* refers to the amount of time outstanding until the expiry date of the option. The time to expiry variable influences the call option's value because the further away the expiry date is, the more opportunity there is for the share price to

rise above the strike price. Thus, the longer the time outstanding until expiry date, the greater the option's time value. As the expiry date approaches, the time value of a call option tends to zero, and the rate of time value decay accelerates. The symbol theta ( $\Theta$ ) measures the effect that time to expiry date has on an option's time value. *Volatility* is a mathematical measure of the amount of movement observed in the underlying share price so as to help predict future share price movements. The more volatile the underlying share price is, *ceteris paribus*, the greater the probability that the share price will move above the strike price making the call option more valuable. Likewise, decreases in volatility tend to decrease a call option's time value. The symbol vega ( $v$ ) is used to denote the effect that a change in implied volatility has on an option's value. (Hull, 2002:183-184 & 317; LIFFE, [S.a.]b.) The *risk-free interest rate* affects the price of a call option indirectly. In general an increase in the risk-free interest rate, increases the growth of the underlying share but decreases the present value of the intrinsic value the optionee will receive. The first effect will always dominate and second effect making the price of a call option rise when the risk-free interest rate increases. In general, *dividends* have the effect of reducing a share price on the ex-dividend date. Consequently, the value of a call option bears an inverse relationship to the size of any anticipated dividends. (Hull, 2002:184-185.)

#### 4.2.3. The Black-Scholes option-pricing model

Black and Scholes (1973) made improvements on the Boness model to arrive at a formula to value a European call option (Foster, Koogler & Vickrey, 1991:598). The model is a function of two variables (share price and time to expiry) and three parameters (exercise price, risk-free interest rate, and the *ex ante* variance of the returns on the option security) (Cuny & Jorion, 1995:195). The Black-Scholes option-pricing formula for a European call option reads as follows:

$$C = SN(d_1) - Ke^{-rt}N(d_2)$$

$N(d_1)$  and  $N(d_2)$  are the cumulative distribution functions of  $d_1$  and  $d_2$  where:

$$d_1 = \frac{\ln(S/Ke^{-rt}) + \sigma^2 t/2}{\sigma \sqrt{t}}$$

S = share price

C = value of the call option

t = time until expiry date in years.

ln = the natural logarithm of the exponential function  $e^x$

e = 2.7 1828 1828 45 90 45  
(to 15 decimal places)

(Brenner & Subrahmanyam, 1994:25.)

In order to understand the model, it must be divided into two parts. The first part  $SN(d_1)$ , derives the present value of acquiring the shares outright and is found by multiplying the share price (S) by the change in the call option premium with respect to a change in the underlying share price ( $N(d_1)$ ). The second part of the model,  $Ke^{-rt}N(d_2)$ , gives the present value of paying the strike price on the expiry date of the option. The fair market value of the option is then the difference between these two parts. (Rubash, 2001.) Both parts of the equation depend on the option being in-the-money ( $S > K$ ), t periods from now (Hemmer, Matsunaga & Shevlin, 1994:26).

In simple terms, the Black-Scholes model values a European call option by assuming the probability distribution of prices are lognormally distributed as opposed to being normally distributed. The model calculates the value of the option as the expected value of the outcome (or area) from the lognormal price distribution above the strike price. This amount is then discounted at the risk-free rate of return to arrive at the present value of the option. It can be proven that the opportunity to invest in a corporate project that employs a net present value discounted cash flow valuation model, is identical to deciding whether or not to exercise a call option at expiration. (McCombs School of Business, [S.a.].) Thus, the Black-Scholes model uses similar principles to that of net present value decisions and the two methods should converge under appropriate circumstances.

$$d_2 = d_1 - \sigma \sqrt{t}$$

K = strike price

r = continuously compounded rate of interest

$N(\cdot)$  = cumulative standard normal

$\sigma$  = standard deviation of the instantaneous annualised rate of return on the share

The Black-Scholes model makes the following important assumptions in arriving at the formula:

- The share pays no dividends or other distributions during the option's life.
- European exercise terms are used.
- There are no transaction costs or taxes charged to buy or sell options.
- Interest rates remain constant through time and are known.
- Returns are lognormally distributed.
- It is possible to borrow, at the short-term interest rate, any fraction of the price of a security to buy it or hold it.
- There are no penalties for short selling. Thus, a seller who does not own a security can borrow the security and sell it for a certain price and will agree to repay the lender at a future date the value of the securities on that date.
- Security trading is continuous.
- There are no riskless arbitrage opportunities.

(Rubash, 2001; Black & Scholes, 1973:640; Hull, 2002:239.)

Such assumptions are important, since if a share option does not meet all of the above requirements, the Black-Scholes model will not provide an accurate valuation of the instrument.

Finally, Merton (1973:141) extended the Black-Scholes model so as to take into account problems created when dividends are paid on the underlying share and when the terms of the option contract are changed. His paper also discussed the extension of the Black-Scholes theory into the pricing of corporate liabilities and other elements of a firm's capital structure (Merton, 1973:141). His modification is sometimes called the continuous dividend version of the Black-Scholes model (Foster, Koogler and Vickrey, 1991:595).

In recognition of their work on option-pricing, Robert C. Merton and Myron S. Scholes shared the Nobel Prize in Economic Sciences in 1997. Fischer Black, who would have shared the Nobel Prize, was deceased at the time the award was conferred. (Economist, 2002.) This shows the importance and significant contributions such model made that its developers warranted the awarding of the Nobel Prize. Despite its popularity, the Black-Scholes model has come under severe criticism by economists in the academic circles and practitioners. To give one example, Macbeth

and Melville (1979:1185-1186) found that for traded options, in contrast to its own conclusions, the Black-Scholes model predicted prices on average less than market prices for options in-the-money and greater for options out-of-the-money.

#### 4.2.4. The Cox-Ross-Rubenstein binomial option-pricing model

The binomial approach to pricing options was developed by John C. Cox, Stephen A. Ross and Mark Rubenstein in their seminal finance paper entitled Option-pricing: A simplified approach. Their approach presented a discrete-time model for valuing options. Unlike the Black-Scholes model, which employs advanced mathematical tools to value options, Cox, Ross and Rubenstein (1979) derived an option-pricing model based on suggestions by Nobel Prize laureate William F. Sharpe, which derived the same results as the Black-Scholes model using more elementary mathematics. In simplistic terms, the model first computes the future share price of the company at exercise date. To do this, the movement in the entity's share price  $S$  from the grant date until the end of the first period-end, will either be a positive increase by a certain percentage  $u$  with a probability  $q$  or it will be decrease by a percentage  $d$  with a probability of  $1-q$ . Thus, the share price will either be  $uSq$  or  $dS(1-q)$ . At the next period-end the same process is repeated based on the share exhibiting the same rate of return and probability of growth and loss. These multiplicative calculations eventually build a binomial tree of potential share valuations at a hypothetical exercise date. Using advanced mathematical tools, the model estimates an average share price from the various share valuations where the share prices must be greater than the exercise price of the option, since prices below this would not result in the option being exercised. Thereafter, the model computes the present value of this average price less the strike price of the option at the exercise date using a riskless interest rate. This amount is equal to the option's value at the grant date. For completeness sake, the model is presented below. Due to the intricate mathematics involved in the formula, only the formula and what the variables stand for are presented below.

$$C = S\tilde{O}[a;n,p'] - Kr^{-n}\tilde{O}[a;n,p]$$

and

$$p = (r-d)/(u-d) \text{ and } p' = (u/r)p,$$

a = the smallest non-negative integer greater than  $\log(K/Sd^n)/\log(u)$ .

If  $a > n$ ,  $C = 0$ .

Where:

$C$  = value of the call option

$K$  = exercise price

$S$  = current share price

$r$  = one plus the riskless interest rate over one period

$\tilde{O}[a;n,p']$  = complementary binomial distribution function

$u$  = rate of return on the share over each period

$\tilde{O}[a;n,p]$  = complementary binomial distribution function

$d$  = rate of return on the share over each period.

$n$  = number of periods

(Cox, Ross & Rubenstein, 1979:239.)

Given appropriate limiting conditions, the Cox-Ross-Rubenstein binomial model converges to a lognormal price process as enumerated in the Black-Scholes model (Benninga & Wiener, 1997:1). Like the Black-Scholes model, Benninga [S.a.] observed that the binomial model can also be used to value other assets besides for share options. He also commented that next to the Black-Scholes model, the binomial model is the most widely used approach to price options. Its advantages are that it can be used to value options that may be exercised early (e.g. American options) and it can be used to value non-conventional options. (Benninga, [S.a.]) Finally, Macbeth and Merville (1980:299) found that the binomial option-pricing model fits market prices of call options significantly better than the Black-Scholes model.

### 4.3. POSSIBLE MEASUREMENT APPROACHES FOR ESOs

#### 4.3.1. Introduction

As mentioned in Chapter 2 (para. 2.8), ESOs are call options written by a company on its own shares. Although option-pricing models are widely used to value traded



call options from both the option writer's perspective and the option holder's perspective, differences between traded call options and ESOs complicate the use of conventional option-pricing models for valuing ESOs. Consequently, many measurement methods, including adapting existing equilibrium option-pricing models, have been proposed for valuing ESOs. This section delves into the possible measurement methods suggested for valuing the ESO instrument used to compensate an employee.

#### 4.3.2. Historical cost method

As mentioned in Chapter 3 (para. 3.5.1), it is quite feasible for a company to repurchase its own shares and use such treasury shares to satisfy the exercise of the ESOs. Proponents of the historical cost method of accounting for ESOs require the following entries to be made in the company's records:

- Repurchase the shares to be used for the share option scheme by crediting the asset account (usually the bank account) and debiting the share capital (and share premium) account(s) with the market value of the shares at the date of repurchase.
- Reissue these shares to the employee at the exercise price of the share options by debiting the asset account (usually the bank account) and crediting the share capital account (and share premium) account(s).
- The difference between the historical cost of reacquiring the shares and the exercise price of reissuing the shares under the share option contract, would then be charged to the income statement at the exercise date. Any shortfall would be regarded as a cost to the company (being the compensation cost of the ESOs) and any surplus would be regarded as a gain to the company.

(IASB, 2002a:paras. BC65-BC66; IASC, 2000:paras. 4.4-4.5.)

It is submitted that these entries are equivalent to the employee subscribing for shares at the market price at exercise date and the company refunding him the intrinsic value of his ESOs at the exercise date. However, the historical cost method was rejected by the IASB for two reasons. Firstly, ED 2 observes that this method simply follows the cash flows involved in redemption and issue of the shares (IASB, 2002a:para. BC67). It notes that such treatment would be appropriate if the instrument under consideration were shares in another entity, which the entity

purchased and then subsequently sold to the employees at a price lower than the market price of the shares (IASB, 2002a:para. BC67). However, with the repurchase of the entity's own shares, the historical cost method assumes that the entity's reacquisition of its own shares is a purchase of an asset, which is incorrect since an entity's own shares are not an asset of itself (IASB, 2000:para. 4.7). Rather, ED 2 states that the distribution of cash to buy-back shares is a return of capital to shareholders and should be recognised as a decrease in equity in the statement of changes in equity and not in the income statement. Similarly, the reissue of the treasury shares is an increase in equity, which must be recognised in the statement of changes in equity. This is in line with the IASB Framework, which states that income and expenses do not result from the contributions or distributions to equity participants. (IASB, 2002a:para. BC68; IASB, 1989:para. 70.) Therefore, the historical cost model incorrectly records a capital transaction between the entity and its employee as an expense rather than an entry to the statement of changes in equity.

In addition, the G4+1 Paper argued that by using the historical cost method, the entity has not recorded the value of the options issued and/or the value of the employee services received in the period in which the employee renders the requisite service (IASB, 2000:para. 4.6). Instead, the historical cost method recognises the total cost of the ESOs in the exercise period and not over the service period, which does not accord with the accrual concept of the IASB Framework. From the above discussion, it is evident that the historical cost method cannot be the correct measurement method for ESOs.

#### **4.3.3. Intrinsic value method**

Because the intrinsic value of a call option is simply the positive difference between the current market price of the underlying shares and their exercise price, an option can potentially be valued accurately at any point in time (and at any measurement date) based on its intrinsic value. However, the IASB noted that the use of such method to value ESOs is inappropriate since it promotes the granting of at-the-money options at grant date so as to recognise a compensation expense of zero at this date (if it is assumed that grant date is the correct measurement date) (IASB, 2002a:para. BC71). This was borne out by events in the United States regarding APB 25 whereby

most firms granted ESOs with zero intrinsic value at grant date to ensure that no compensation cost would be recorded in terms of APB 25.

Furthermore, as explained in paragraph 4.2.2, a call option's total value is equal to its intrinsic value plus its time value. Valuing the ESO based solely on its intrinsic value grossly distorts the value of the ESO since only a portion of its value is being determined. Therefore, should a company issue an ESO at grant date whereby the intrinsic value is zero, it does not necessarily mean that the option's total value is zero. Rather such option's total value comprises wholly of time value and by ignoring time value by applying the intrinsic value method, such options are understated by 100% at grant date. (IASB, 2002a:para. BC73.) Furthermore, use of the intrinsic value method would incorrectly assume that options with the same intrinsic value but different times until expiry or volatilities are similar (IASB, 2000:para 4.12). Consequently, by valuing ESOs at their intrinsic value, this may distort their actual value and the compensation expense associated therewith. It is therefore contended that the intrinsic value measure does not provide an accurate measure of the value of the ESO instrument used to compensate employees.

#### **4.3.4. Minimum value method**

This method derives its name from the method of its calculation. It is based on the premise that a person who wishes to purchase a call option on a given share, would be willing to pay at least (and the option writer would demand at least) the value of the right to defer payment of the exercise price until the expiry date of the option. The minimum value can be calculated using either a present value technique or an option-pricing model with an expected volatility of almost zero. (IASB, 2002a:paras. BC75-BC76; FASB, 1995:paras. 139-140.)

The problem with the minimum value model is that it only captures a portion of the time value of the option but ignores the effects of volatility. As explained in paragraph 4.2.2, option holders benefit from volatility in that the more volatile the share is, the greater the probability that the share will reach the given exercise price. By ignoring volatility, this underestimates the value of options and therefore the associated compensation expense. (IASB, 2002a:para. BC77; Levinson, 1999:203.) Thus, the minimum value method does not produce an adequate measure of the value of the

ESO instrument for external financial reporting purposes. Nevertheless, both SFAS 123 and ED E-124 permitted unlisted companies to use a minimum value approach due to such companies being unable to estimate their own share price volatility (FASB, 1995:para. 20; FASB, 1993:para. 17). It is submitted that such approach promotes incomparability between different companies and may even lead to companies manipulating their corporate structure in order to use the minimum value method to achieve a lower ESO cost. Therefore, no such choice should be permitted.

#### **4.3.5. Fair value method**

ED 2 defines the term fair value as “the amount at which an equity instrument granted could be exchanged between knowledgeable, willing parties in an arm’s length transaction” (IASB, 2002a:para. BC80). Unlike the intrinsic value or minimum value methods, the fair value method values the option at its fair value or total value which captures both the intrinsic value and the time value of the option. This value fully reflects the barter transaction between the entity and its employees, whereby the entity has agreed to grant options to employees for their services to the entity over the service period. (IASB, 2002a:para. BC80.) Due to the inherent limitations of the other measurement approaches mentioned above, ED 2 concludes that share options granted should be measured at their fair value (IASB, 2002a:paras. BC81). The G4+1 Paper and SFAS 123 supported the above sentiments (IASB, 2000:paras. 4.13-4.14; FASB, 1995:para. 135).

Furthermore, ED 2 notes that fair value is now used in other areas of accounting, including other transactions in which non-cash resources are acquired through the issue of equity instruments (IASB, 2002a:para. BC79). For example, a business acquisition is measured at the fair value of the consideration given, including the fair value of any equity instruments issued by the entity (IASB, 1993:para. 21). Consequently, measuring ESO transactions at fair value ensures that these transactions are represented faithfully in the financial statements, and consistently with other transactions in which the entity acquires resources in exchange for the issue of a financial instrument. It is concluded that the fair value method is the most appropriate measurement approach for valuing ESOs as it calculates the total value of the ESO and thereby reflects the true value of the ESO instrument paid to the

employee. There are, however, many methods to determine the fair value of an ESO and these are discussed in paragraph 4.4.

#### **4.4. METHODS TO DETERMINE THE FAIR VALUE OF AN ESO**

##### **4.4.1. Introduction**

It must be pointed out that the objective in determining the fair value of ESOs for accounting purposes is to estimate the price at which a willing buyer and a willing seller would be willing to exchange for the ESO in an arm's length transaction (FASB, 1995:para. 9; IASB, 2002:para. BC80). It is submitted that such amount is equivalent to the option premium or value the ESO would attract if sold or issued on the market to a third party investor. Furthermore, this amount is equivalent to the present value of the potential forfeited proceeds from the ESOs that the company may forfeit by issuing the underlying shares at the exercise price as opposed to the prevailing market price. It is this value which must be determined in order to accurately record the value of the ESOs issued to compensate the employees. As mentioned in Chapter 3 (para. 3.6.7), although the various techniques for valuing ESOs are not entirely accurate, this does not preclude an attempt to ascribe a value to them. In fact, Smith and Zimmerman (1976:364) used a bounding technique for valuing ESOs. They felt that even if a lower bound were to be used to value ESOs rather than a precise value, it would result in a smaller error than introduced by APB 25 (Smith & Zimmerman, 1976:364). This section explores the various techniques that can be used to determine the fair value of ESOs as described in the classic finance literature so as to satisfy the objectives of fair value.

##### **4.4.2. Option-pricing models**

###### **4.4.2.1. Differences between traded options and employee share options**

Although ESOs are a type of call option, they differ in a number of important respects from traded share options. These differences significantly complicate the problem of applying option-pricing models developed specifically for traded share options to the valuation of ESOs. Before exploring the various option-pricing models developed for ESOs, it is first necessary to enumerate the differences between traded options and ESOs. These differences are expounded upon below:

### *Option term*

The option term of ESOs is much longer than a traded option and is usually 10 years. Over long periods of time, it becomes difficult to estimate the underlying share's volatility and dividend yield, which are inputs in conventional option-pricing models. Furthermore, with long periods of time, even slight errors in such variables can materially change the calculated option values based on option-pricing formulae. (Rubenstein, 1994:6-7; IASB, 2002a:para. BC174.)

In addition, because of the possibility of early exercise as explained below, the option term is stochastic (random) which is in contrast to the Black-Scholes model which relies on a determinable option term. Option-pricing models like the Black-Scholes model also rely on the fact that volatility remains constant over the life of the option. However, because of an increased option term with an ESO, such assumption will not hold. (Hemmer, Matsunaga & Shevlin, 1994:25.) In fact, Varian (2002:C2) pointed out that the whole point of issuing ESOs is to increase the underlying share price and by assuming that the statistical properties of ESOs are constant is illogical.

### *Vesting conditions and forfeiture probability*

As mentioned in Chapter 2 (para. 2.8.5), ESOs often include vesting conditions in one form or another and during the vesting period the ESOs cannot be exercised. Furthermore, there might be other specified periods during which an ESO cannot be exercised (e.g. during a closed period) (IASB, 2002a:para. BC145). Accordingly, an ESO is sometimes called a Bermudian option (being between the United States and Europe) because it is not an American option since it cannot be exercised at any time nor is it a European option since it can only be exercised at any time after the vesting period (Rubenstein, 1994:8).

Should the vesting conditions not be fulfilled, (e.g. if the employee leaves during the vesting period) any unvested ESOs lapse. Alternatively, should the executive have vested options and terminate his services early, his options must be exercised immediately. (Carpenter, 1998:128; Cuny & Jorion, 1995:195.) ED 2 notes that vesting conditions alone do not necessarily imply that the value of ESOs is significantly less than the value of traded options (IASB,2002a:para. BC168). Rather,

it is the forfeiture probability induced by vesting conditions which decreases the ESO's value. Both Cuny and Jorion (1995:195) and Rubenstein (1994:10) argued that the existence of vesting conditions coupled with the probability of forfeiture, significantly reduces the value of an ESO compared to a traded option due to the option's term being reduced. Similar sentiments were expressed by Weygandt (1977:48-49) and Young (1993:58-59).

*Non-transferability (liquidity value) and non-hedgeability*

As mentioned in Chapter 2 (para. 2.8.6), ESOs are inalienable and therefore cannot be sold by the employee – they can only be exercised (FASB, 1995:para. 169). ED 2 notes that the inability to transfer an ESO limits the opportunities available to the holder before the expiry date to terminate his exposure to future price changes in the underlying shares. For example, the holder may wish to sell the option if he believes that over the remaining term the underlying share price is going to fall. In the case of a normal traded option, the holder could sell the option rather than exercise it, which enables him to receive the option's fair value (its intrinsic value and remaining time value). However, with an ESO, the only possibility open to the option holder available in such situations is to liquidate his position by exercising the option (albeit after the vesting period), which entails forgoing the remaining time value and only receiving the option's intrinsic value. (IASB, 2002a:paras. BC152-BC154; IASC, 2000:paras. 4.30-4.32.)

Most executives are inherently undiversified with their physical as well as their human capital being invested disproportionately in their company. Hence, if such people are compensated with options, they will tend to reduce their risk profile and diversify their portfolios. Since they cannot realise their ESOs on the market, they will tend to exercise them as early as possible so as to diversify their wealth. (Bodie, Kaplan & Merton, 2003:66; Hall & Murphy, 2002:8.) Therefore, by imposing the restriction on transferability, the entity has caused the effective life of the option to be shorter than its contracted life, which reduces the value of an ESO relative to a traded option (IASB, 2002a:para. BC156).

Furthermore, Huddart (1994:210-211) explained that in the United States the employee also cannot implement a trading strategy to hedge his position in the

employer's shares by short selling the shares. This is prohibited by section 16-c of the Securities Exchange Act (Carpenter, 1998:131). Similarly, ED 2 notes that employees are often unable to protect themselves from future changes in the value of their options by buying and selling derivatives like a zero-cost collar, as such arrangements are not always available from investment bankers (IASB, 2002a:para. BC158-BC159). Therefore, hedging restrictions coupled with non-transferability restrictions, imply that executives may exercise their ESOs earlier causing the value of the option to be significantly less than that predicted by the classical option-pricing models (Rubenstein, 1994:13; Noreen & Wolfson, 1981:385-386).

#### *Other features of employee share options*

The exercise strategy of the employee is also dependent upon the taxation legislation in the relevant country and the type of ESO (e.g. indexed options, fixed options or variable options). For example, an employee may decide to delay his exercise in order to postpone the payment of taxation. Such delay may increase the value of the option since the time value of the option increases. (Rubenstein, 1994:17.)

Although prohibited in most countries, ESOs may also be exercised in a different manner to a traded option if employees (especially executives) are privy to inside information not yet available to the market, which would not be the case with traded options (Hemmer, Matsunaga & Shevlin, 1994:25; Carpenter, 1998:128). Finally, Kulatilaka and Marcus (1994:53) found a further anomaly with ESOs in that their values tend to fall when volatility rises which is in contrast to conventional option-pricing model predictions.

#### **4.4.2.2. Justification for the use of option-pricing models for valuing ESOs**

Due to the many differences between ESOs and traded options, it is often argued that it is not possible to measure ESOs reliably using option-pricing models. However, the IASB concluded that there is authoritative academic research to support a conclusion that it is possible to make a reliable estimate of the fair value of ESOs using option-pricing models. Secondly, it felt that users of accounts (in response to the G4+1 Paper) regarded the fair values of ESOs which made use of option-pricing models as sufficiently reliable for recognition in the financial statements. (IASB, 2002a:paras. BC291.) Therefore, if the people who use the



financial statements in making economic decisions regarded the fair value estimates as sufficiently reliable for recognition in the financial statements, this provides strong evidence of measurement reliability using option-pricing models. In addition the IASB concluded that a fair value estimate using option-pricing models may result in some understatement or overstatement of the ESO but is far better than any other measurement basis that will definitely result in substantial understatement of the associated expense (e.g. the intrinsic value method) (IASB, 2002a:paras. BC293-BC294).

The IASB acknowledged that the mathematics surrounding option-pricing models is complex, but felt that this should not preclude their use. The reason is that only the input variables need to be determined, and the necessary calculations are performed on a calculator or spreadsheet. (IASB, 2000:para. 4.25.) Similarly, the FASB noted that just as for the pension fund liability, the accountant uses an actuary to estimate the fair value of the liability, so too it is unnecessary for the accountant to understand the inherent mathematics in option-pricing models (FASB, 1995:para. 164). Rather, the accountant should leave the technical aspects of option-pricing models to the experts in this field and audit the values obtained from such person to make sure that they comply with the requirements of the relevant financial reporting standard. Consequently, recent proposals by the FASB and the IASB regarding the measurement of ESOs have gone the route of using option-pricing models to determine the fair value of ESOs.

#### **4.4.2.3. Option-pricing models for valuing ESOs**

Because ESOs differ in many respects to traded options, existing option-pricing models must be adjusted or new option-pricing models must be devised to value such instruments. Below is a synopsis of the various option-pricing models described in the academic literature to value ESOs.

##### *The modified Black-Scholes model*

According to research conducted by Ernst & Young LLP, the overwhelming majority of US companies used the Black-Scholes model in valuing their ESOs for the purposes of SFAS 123 disclosure (Ernst & Young LLP, 2002:5). Weygandt (1977:50)

found that the option-pricing models like the Black-Scholes model provided good

answers to the valuation of Nonqualified Stock Options (NQSOs) in the United States. In fact Foster, Koogler and Vickrey (1991:595) used the normal (non-dividend) Black-Scholes model for valuing ESOs for firms that do not pay dividends and the continuous dividend version developed by Merton (1973) for firms that pay cash dividends.

Jennergren and Näslund (1993:182) proposed a modification of the Black-Scholes model to account for premature executive departure feature inherent in ESO contracts denoted by the symbol  $\lambda$  ( $\ddot{\epsilon}$ ). These authors found that if  $\ddot{\epsilon}$  was constant and followed a Poisson process, the value of ESOs could be calculated via the Black-Scholes model (Jennergren & Näslund, 1993:180 & 182). Cuny and Jorion (1995:193 & 195-196) further developed this model and proved that ( $\ddot{\epsilon}$ ) should not be assumed to be constant, but rather is negatively correlated with share price performance. They concluded that ignoring the link between departure rates ( $\ddot{\epsilon}$ ) and the share price, leads to a substantial undervaluation of ESOs (Cuny & Jorion, 1995:203).

Hemmer, Matsunaga and Shevlin (1994:38-40) also developed a modification of the Black-Scholes model to compute the value of an ESO. They computed the value of the ESO as if it expired at vesting date plus the expected time the ESO will be held from the vesting date till expiry date multiplied by the annual average increment in the value of the ESO from the vesting date till expiry date. (Hemmer, Matsunaga & Shevlin, 1994:38-40.) Furthermore, the Analysis Group/Economics extended the Black-Scholes model to take into account all the unique features of ESOs so as to determine the fair value of the ESO, which would equal the hypothetical price that a diversified outside investor would pay for the right to receive the ESO cash flows in an arm's length transaction (Sinnott, 2003:55). Such value would meet the objectives of "fair value" for accounting purposes as described in paragraph 4.4.1 above and therefore, this valuation model is a potential model which could be used for valuing ESOs for financial reporting purposes.

The above literature supports the view that the Black-Scholes model can be used to value ESOs. However, as explained in Chapter 3 (para. 3.5.4), severe criticism has been levelled at the use of the Black-Scholes model for determining the fair value of ESOs. Frederick W. Cook & Co., Inc (2002:2) noted how US companies used the

unadjusted Black-Scholes model to value their ESOs and this grossly overvalued the options due to the fact that the model does not take into account all the differences enumerated in paragraph 4.4.1.1. According to Maxim Integrated Products Inc. (2002:2), the reliability of the Black-Scholes model for measuring options for longer duration periods is not empirically supported. It emphasised that the model makes use of a number of assumptions and inputs like volatility, risk-free interest rate, dividends and option duration, all of which are subjective and are prone to manipulation. It therefore concluded that the Black-Scholes model cannot be used to achieve credibility and comparability of financial statements due to its distortion of the true value of ESOs. (Maxim Integrated Products Inc, 2002:2.) This was supported by Ciccotello and Grant (1995:76) who noted how new companies who had higher volatilities in their share price, would attempt to minimise the impact of the Black-Scholes model on their earnings by making the estimates of share price variances as low as possible.

Similar criticism was made by the European Employee Stock Options Coalition (EESOC) in its comments to ED 2 (EESOC, 2003:7-16). Young (1993:57) also pointed out that the Black-Scholes model is difficult to understand and users are sometimes unaware of what the outputs are which makes it difficult to modify the model for the specific features of ESOs. He felt that its highly restrictive assumptions as well as its inability to deal with differences between ESOs and traded options (especially regarding vesting restrictions) make the Black-Scholes model only one of the several techniques to be used to value ESOs. (Young, 1993:57-59.) This literature suggests that an adjusted Black-Scholes value provides inaccurate valuation results for ESOs.

Nevertheless, Soffer (2000:170) found that although other models may be theoretically more sound, the SFAS 123 proposals in computing the ESO values (of which the Black-Scholes is the most used method) provided reasonable values for computing a discounted cash flow valuation of a firm. Similarly, Carpenter (1998:129 & 147) found that the SFAS 123 method (which uses the Black-Scholes model for the examples in its appendix) was very close to the correct option value under the “adjusted” valuation techniques employed in her survey and in fact she found that the SFAS 123 values were slightly less than the other models used in her study.

Hall and Murphy (2002) resolve the apparent contradiction between the supporters and opponents of the Black-Scholes model. In their innovative paper, these authors made the quintessential distinction between the “executive value” of an ESO and the “company cost” of an ESO. They stated that the economic cost to the company (the option writer) of granting an ESO is the amount that the company could have received if it were to sell, in an arm’s length transaction, a similar option with similar terms to an outside investor as a share purchase warrant. (Hall & Murphy, 2002:8-9). Therefore, the economic cost to the company of granting an ESO is equal to the opportunity cost of issuing the ESO to the employee and thereby forfeiting the option premium proceeds it could have received had it issued the ESO on the market for cash. As mentioned in paragraph 4.4.1, such amount is equal to the present value of the difference between the fair value of the underlying shares at exercise date and the exercise price. These authors correctly pointed out that it is *this* value that should be measured using an adjusted Black-Scholes model since this meets the objectives of “fair value” for accounting purposes. However, the value of the ESO to an undiversified risk-averse executive (the option holder) is the amount of riskless cash he would exchange for a non-tradable option and this amount must not be used to value ESOs for financial accounting purposes (Hall & Murphy, 2002:9). The difference between the cost of the option to the company and the value of the option to the executive is a function of the executive’s risk premium, which is usually quite high due to the undiversification of the executive’s portfolio and his relative risk aversion. These authors therefore contended that the reason executives feel that the Black-Scholes values ESOs too high is because the model does not consider the “risk-adjusted pay” from the executive’s point of view (Hall & Murphy, 2002:6-7). They maintained that although the Black-Scholes model does require certain adjustments in order to be used to value ESOs, any restrictions on tradability and hedging affect the ESOs value to the executive (the option holder) and not its cost to the company (the option writer) (Hall & Murphy, 2002:15). Similar views were also expressed by Carpenter (1998:132) and Lambert, Larcker and Verrecchia (1991:130-131 & 145).

It is therefore contended that critics of the Black-Scholes model have failed to distinguish from whose perspective the ESO is being valued. It is only the value to the option writer which is relevant for accounting purposes whereas the value of the option to the executive is irrelevant. Consequently, only adjustments affecting the

value of the options to the writer must be made to classic option-pricing models when using them to value ESOs for accounting purposes. Because the risk premium of the executive is higher than an outside investor willing to purchase a similar option, the value of a comparative ESO to the executive is lower than that of the investor and therefore the issuing company.

*The modified binomial option-pricing model*

Maller, Tan and Van de Vyver (2002:13) emphasised the point that the binomial model is extremely flexible in that it can be extended to more “exotic options” like ESOs. Rubenstein (1994:1-19) developed an enhanced binomial option-pricing model for ESOs requiring 16 input variables, yet he found that different assumptions could lead to material deviations in ESO prices. Aboody (1996:362-365) also developed a modified version of the binomial option-pricing model to value ESOs. His model required that during the vesting period, the value of the ESO was the value of a normal option multiplied by the probability that the employee remains in the firm till the option vests. After the vesting period, the value of a vested option would be multiplied by the probability of early exercise to account for the non-transferability aspects of ESOs. His model did assume a constant share volatility and dividend payout ratio, since estimating such variables was deemed to be too subjective. (Aboody, 1996:362-365.) This suggests that Aboody’s model could not be applied in practice since it would be incorrect to assume a constant share volatility and dividend pay-out ratio for any company, especially in today’s volatile economic environment.

Other researchers developed binomial valuation models to take into account the effects of non-transferability and non-hedgeability of ESOs. Both Kulatilaka and Marcus (1994:47-55) and Huddart (1994:211-230) developed binomial option-pricing models based on the optimal exercise policy of the option holder who is unable to hedge or sell his ESOs. However, Kulatilaka and Marcus (1994:55) concluded that their model could not be used to value ESOs as it would require input variables that were too difficult to measure or observe. More recently, Analysis Group/Economics designed a model for ESOs which assumed that the underlying shares follow a binomial process and that exercise decisions are made so as to maximise the utility of the optionee’s expected wealth (Sinnott, 2003:55). Nevertheless, Maller, Tan and

Van de Vyver (2002:12) felt that such utility-maximising models required estimates that were impractical to obtain from anyone other than the employee himself.

Carpenter (1998:133) developed an extension of the binomial option-pricing model to value an American option, by introducing a so-called “stopping-rate ( $q$ )” to the standard model, which is the probability that the executive will stop the option early which is caused by any event relevant to ESOs but not to traded options, such as a desire to diversify or employment termination. She felt that besides for the stopping rate, the executive would act identically according to American option theory (Carpenter, 1998:129). She also found that her extended American option model performed identically to the more complex utility maximising models developed by Huddart (1994) and Kulatilaka and Marcus (1994), suggesting perhaps that little is gained by incorporating a preference-based decision process in a valuation model (Carpenter, 1998:154). Thus, Carpenter’s model could potentially be used to value ESOs for financial reporting purposes owing to the results of her research. Finally, Maller, Tan and Van de Vyver (2002:14) developed a binomial model which incorporated the possibility of executive departure and other specific features found in ESOs issued by Australian listed companies. Their model was applied to more than 100 Australian companies and they found that using their model proved to be informative and useful to shareholders (Maller, Tan & Van de Vyver:2002:12 & 20). This further supports the argument that a binomial model can be used to value ESOs for accounting purposes.

#### *The Boudreaux and Zeff Model*

Boudreaux and Zeff (1976:159-162) proposed using the Capital Asset Pricing Model as described by Sharpe (1964) and Lintner (1965) to estimate the future share price of the firm. They then suggested that the difference between the expected future share price and the exercise price, discounted using the expected return on the shares derived based on the Capital Asset Pricing Model, is to be used as the valuation of ESOs (Boudreaux & Zeff, 1976:160-162). However, Smith and Zimmerman (1976:359) criticised such model in that the parameters required to implement the model were not objective and verifiable and that discounting based on the expected return of the share cannot be applied in this scenario. This demonstrates that their model could not be applied for accounting purposes.

### *The Valrex Model*

The Valrex model is an innovative model which values an ESO by valuing it like a traded call option and then stripping away the option's liquidity value i.e. the value attributable to being able to sell the option. It uses the principle that if one holds a security that cannot be traded for a certain period and purchases a put option to sell such security at its free-market price, the holder has effectively purchased marketability for the security. The price of the put option is therefore the liquidity value of the security. The Valrex model computes the fair value of a freely tradable call option on the underlying shares of the ESO using a trinomial option-pricing model, similar to that developed by Cox, Ross and Rubenstein (1979). Thereafter, the liquidity value is computed using an at-the-money *put-on-call option*, which is a put option to sell the freely tradable call option at an exercise price equal to the current price of the call option. The difference between the fair value of the freely tradable call option and the put-on-call option is the Valrex's fair value of the ESO, which therefore excludes any selling privileges embedded in the freely tradable call. (Katsanis, 2001:4 & 8.)

Katsanis (2001:8) and Katsanis (2002) reported that the Valrex model resulted in a more reliable measure of ESO value than the Black-Scholes and other option-pricing models. In contrast to the Black-Scholes model, the Valrex model did not fluctuate significantly as the volatility input variable changed (Katsanis, 2001:8). Based on the results of this research, it implies that the Valrex model could be a reliable alternative in valuing ESOs for accounting purposes.

### *ED 2 model*

ED 2 comments that the objective of estimating the fair value of ESOs for accounting purposes is to calculate the value that the ESOs granted to the employees could be transferred between knowledgeable and willing parties in an arm's length transaction. The proposed statement echoes what was said by Hall and Murphy (2002) in paragraph 4.4.2.3 and requires that the value of an ESO be determined from the employer's perspective and therefore any adjustments to the value of the ESO that are relevant to the employee only, must not be incorporated into the valuation model. (IASB, 2002a:para. BC80 & BC164.)

ED 2 states that ideally the fair value of the ESO should be determined at the fair value of traded call options with similar terms and conditions. However, if no such traded call option exists, an option-pricing model like the Black-Scholes model or a binomial model may be used instead. (IASB, 2002d:para. 20.) ED 2 does not specify a model for determining the ESO's fair value. The reason is that it felt that at the time of its writing, there was no conclusive method for valuing ESOs. It reasoned that the purpose of accounting standards is to set principles, rather than setting prescriptive standards on valuation, which would become outdated by improved valuation methodologies in the future. (IASB, 2002a:paras. BC132 & BC 173; IASC, 2000:para. 4.26.) However, it is felt that it is the task of the FASB and the IASB to narrow down the selection of option-pricing models for ESOs and instead prescribe specific models for ESO valuation. This in turn, would facilitate comparability and consistency between companies. By not doing this, companies may be persuaded to choose an option-pricing model that results in the lowest ESO value.

ED 2 requires the following variables to be taken into account in valuing ESOs, irrespective of which option-pricing model is used:

- The exercise price of the option.
- The life of the option (option term).
- The current market price of the underlying shares.
- The expected volatility of the share price.
- The dividends expected to be paid on the shares.
- The risk-free interest rate for the life of the option.

(IASB, 2002d:para. 20.)

ED 2 declares that the inability of an option holder to exercise his ESOs during the vesting period due to unfulfilled **vesting conditions** need not be taken into account when using a European option-pricing model (e.g. the Black-Scholes model), as this is already programmed within such model. However, should a model be used which values American options (e.g. the Cox-Ross-Rubenstein binomial model), such model must be adjusted to take into account the inability to exercise ESOs during the vesting period. (IASB, 2002d: para. 22; IASB, 2002a:paras. BC150-151.)



ED 2 states that the probability of **forfeiture** due to the non-fulfilment of vesting conditions must be taken into account when computing the option's value. The valuation at grant date can be reduced to allow for the possibility of forfeiture in one of two ways:

- Adapting the valuation model to incorporate vesting conditions (e.g. the Cuny and Jorion (1995) model).
- Estimating the probability of forfeiture at grant date (called a *forfeiture rate*), and reducing the value produced by the relevant option-pricing model (e.g. the Carpenter (1998) model).

(IASB, 2002d:para. 24; IASB, 2002a:paras. BC171-BC172.)

It is submitted that making an adjustment for forfeiture probability is consistent with the fact that the non-fulfilment of vesting conditions decreases the estimated life of an ESO and therefore the value of the ESO to the executive and its cost to the company.

ED 2 suggests that to account for the effects of **non-transferability and non-hedgeability**, the ESO's *expected life*, rather than its *contracted or maximum life* must be taken into account in determining the option term as an input in the option-pricing model. It asserts that the use of the expected life is appropriate, whether or not the employee can hedge his position using derivatives. The reason is that if the employee were able to mitigate the effects of non-transferability by using derivatives, this would result in the ESOs being exercised later than they otherwise would be. Therefore, the expected life of the option would be longer, and hence the estimated fair value of the option would be higher, which is logical, given that non-transferability is not a constraint in this case. However, if the employee cannot mitigate the effects of non-transferability through the use of derivatives, he is likely to exercise the options much earlier. In this case, expected life would be significantly shorter than contracted life, and hence using expected life rather than contracted life in the option-pricing model would significantly reduce the estimated value of the option. (IASB, 2002d:para. 21; IASB, 2002a:para. BC160.) ED 2 states that when estimating the expected life of share options granted to a group of employees, the entity can either base that estimate on an appropriately weighted average expected life for the entire employee group or on appropriately weighted average lives for subgroups of employees within the group, based on more detailed data about employees' exercise behaviour (IASB, 2002b:para. IG10). ED 2 also addresses the issue as to whether

non-transferability together with the possibility of forfeiture may have a combined effect of reducing the ESO's value even further. It concludes that both of these adjustments are already taken into account and any additional effect from the combination of these two features is an issue for the employee's concern and is irrelevant from the employer's perspective, hence no extra adjustment is required. (IASB, 2002a:paras. BC161& BC164.) It is contended that making an adjustment for non-transferability and non-hedgability attributes of ESOs is not in line with the definition of fair value. The reason is that such restrictions are only relevant from the executive's perspective, whereas there is no reason why an outside investor purchasing the options in an arm's length transaction could not hedge or trade such options. Consequently, non-tradability and non-hedgability effects of ESOs affect the value of the ESO to the executive and not the employee and therefore should not be taken into account when valuing the ESO for accounting purposes.

From the above, it is evident that the ED 2 valuation model allows the use of any valuation model provided they take into account the relevant adjustments. It is suggested that companies make use of at least two reliable option-pricing models for valuing ESOs so the one can be used as a reasonability test for the other. Finally, ED 2 requires that all companies estimate volatility, including new or unlisted companies in valuing their ESOs. New or unlisted companies are required to use estimates of expected volatility for the purpose of applying an option-pricing model. (IASB, 2002a:para. BC143.) The proposed statement gives guidance as to how such companies should estimate expected volatility for their shares. Newly listed companies are encouraged to use the historical volatility of similar entities or calculate volatility for the longest period for which trading activity is available in respect of its own shares. Unlisted entities could use an internal market set up for their shares or the implied volatility of similar listed entities or volatility can even be computed based on its shares being valued on an earnings or net asset value basis. (IASB, 2002b:paras. IG19-IG23.) Although estimating the volatility variable can be a very subjective exercise, it is submitted that if such assumptions be disclosed in the financial statements, comparability between financial statements will be enhanced as all companies will be required to value ESOs the same. Consequently, it is suggested that ED 2's approach is correct in this respect. Therefore, all companies should make an estimate of their share's volatility for valuing ESOs for accounting purposes.

*SFAS 123 model, the ED E-124 model and the G4+1 Paper model*

The term “fair value” in SFAS 123 bears a similar meaning to that of ED 2 (FASB, 1995:para. 9). Similarly, ED E-124 defined the fair value of an ESO as being the amount a willing seller would accept for the ESO and the amount a willing buyer, who might or might not be an employee, would pay for it. It also stated that it is the cost to the firm (option writer) of granting the ESO that is relevant, irrespective of the value the employee (option holder) attaches to the same ESO. (FASB, 1993:para. 50.)

Like ED 2, both SFAS 123 and ED E-124 state that ideally quoted market prices should be used to estimate the fair value of an ESO. However, because such prices do not exist, SFAS 123 and ED E-124 require that the fair value of a share option granted by a public company be calculated using an option-pricing model that takes into account adjustments similar to those prescribed by ED 2. (FASB, 1995:para. 19; FASB, 1993:paras. 116, 16, 123 & 125.) Similarly, the G4+1 Paper required that an option-pricing model be used to value ESOs which takes into account similar modifications to that of ED 2 (IASB, 2000:para. 4.27).

SFAS 123 states that should it be impossible to reasonably estimate the instrument's fair value at grant date, the measurement should be delayed until it is possible to estimate reasonably the instrument's fair value (often the vesting date). The standard requires that estimates of compensation expense for earlier periods (i.e. until it is possible to estimate fair value) should be based on current intrinsic value. (FASB, 1995:para. 22.) On the other hand, ED E-124 required that should it be impossible to estimate the fair value of an ESO at grant date, the value of the ESO at exercise date would instead be used to value the ESO (FASB, 1993:para. 18). The G4+1 Paper recommended that where an entity is unable to reliably estimate the fair value of its options at grant date, the alternative is to measure the fair value of the services received. If such value is indeterminable, the entity should instead defer measurement until exercise date. (IASB, 2000:para. 4.45.) It is argued that using such approach opens loopholes which may promote avoidance of using the fair value approach in favour of a method that produces a lower ESO value. It is felt that no such alternative should be allowed in an accounting standard.

Finally, like ED 2, SFAS 123, ED E-124 and the G4+1 Paper required that the expected life of the ESO be used in applying option-pricing models rather than its maximum term (FASB, 1995:para. 169; FASB, 1993:para. 15; IASC, 2000:para. 4.35). ED E-124 required that the ESOs' estimated lives at grant date to be subsequently adjusted for subsequent changes in the expected or actual lives of the ESOs (FASB, 1993:para. 15). According to the G4+1 Paper, should it not be possible to estimate the expected lives of the ESOs at grant date, it required that the contracted life rather than the estimated life to be used instead in the valuation of the entity's ESOs (IASB, 2000:para. 4.35). It must be pointed out at this stage that many authors (Hemmer, Matsunaga & Shevlin, 1994:23; Bodie, Kaplan & Merton, 2003:66-67; Huddart, 1994:226) regard the use of the expected term of the ESO as being a cause for the overvaluation of the ESO. In addition, some argue that the use of "expected life" may cause bias estimates in order to make the charge to the income statement smaller (IASB, 2000:para. 4.34). It is submitted that ED 2's argument that estimated life approximates contractual life is correct since use of contractual life will overestimate the value of an ESO that is exercised earlier whereas use of estimated contractual life will never do this. Therefore, to avoid such problem, the ESO's estimated contractual life should be used as is currently required by the IASB and the FASB.

#### **4.4.3. Other valuation approaches**

The approaches suggested in this section are alternative valuation techniques to value ESOs which do not employ the use of option-pricing models. Campbell (1961:56-57) felt that the board of directors are constantly faced with the task of establishing prices for rights issues, takeovers and other transactions. He saw no reason as to why the board of directors together with their investment bankers could not reach a reasonable value for their ESOs (Campbell, 1961:56-57). In fact in 2002, it was reported in the Wall Street Journal that the Coca-Cola Company intended to use two investment bankers to determine the fair value of their ESOs. It would solicit bids from these investment bankers to buy or sell its ESOs at terms similar to those outstanding. It would then average the two competitive bids to arrive at a price. Such a process would ensure the ESOs are fairly valued because the company could require the investment bankers to buy or sell the options for their bid prices. (Wall Street Journal, [S.a.]) A similar approach was suggested by Hull and White (2003:8).

This approach was however criticised by Boudreaux and Zeff (1976:158-159) who felt that such valuation technique relied too much upon estimates of insiders in the company. Furthermore, it is submitted that these valuation approaches are subjective and could not be applied consistently to all companies. Perhaps they could be used as reasonability tests when testing the veracity of the numbers produced by the relevant option-pricing model.

Sometimes the employer offers to pay the employee by issuing him options or by paying him with cash. Another approach suggested to value ESOs is that the amount of such cash alternative should be regarded as the fair value of the ESOs for accounting purposes. However, many problems are associated with such a solution. Firstly, the value produced by the cash alternative does not meet the definition of “fair value” since the cash alternative is determined between the company and its employees and is not an independently negotiated price. Secondly, one cannot compare cash with options since the two have different economic natures due to differences in their liquidity and risk profiles. Thirdly, some companies may wish to conserve their cash and would rather offer more options and a low cash alternative so as to encourage the employees to elect the ESO alternative. Because of these reasons, the cash alternative cannot be assumed to be equal to the fair value of the ESO. (IASB, 2000:paras. 4.18-4.20.)

From the above discussion, it is concluded that the fair value method of accounting making use of option-pricing models should be used to value ESOs for accounting purposes. The amount to be recognised for the ESO is equal to the arm’s length price the company could have sold the ESO for cash on the market. This is consistent with the determination of fair value of other items recognised in the financial statements and best reflects the exchange transaction between the company and its employee.

#### **4.5. POSSIBLE MEASUREMENT DATES FOR ACCOUNTING FOR ESOs**

##### **4.5.1. Introduction**

To recap what was concluded in Chapter 3 (para. 3.7), the economics of the ESO transaction is that the entity is paying the employee for his services with the issue of an ESO instrument which is an obligation to issue the company’s shares at a discount to the market price of such shares. From the discussion in paragraph 4.4, it

is evident that consensus seems to be that ESOs must be valued at fair value determined using an option-pricing model of one form or another in order to compute the amount compensated to the employee for his services. However, much controversy exists regarding the measurement date for ESOs. The term "measurement date" does not refer to the date at which compensation expense accrues in the financial statements. Rather, it refers to the date at which the fair value of the ESOs is determined for the purposes of computing the ultimate compensation expense for the ESOs. (FASB, 1995:para. 199 & footnote 15 to para 120.) This date is dependent upon the date upon which the ESO instrument is *issued* by the enterprise to the employee (i.e. the obligations inherent in the ESO become binding) as opposed to being *granted* to him. The possible measurement dates available for ESOs are: vesting date, service date, grant date and exercise date. Each one of these dates is considered below.

#### 4.5.2. Vesting date

Vesting date (or exercisable date) is the date when the employee has satisfied all the conditions necessary to become entitled to exercise the option. For example, if the employee is required to remain in the entity's employ for three years, vesting date is at the end of that three-year period. (IASB, 2002a:para. BC83.) Supporters of vesting date contend that until the vesting date, the employee has not earned the right to retain the options. They feel that between grant date and vesting date, the employer has merely made an *offer* to compensate the employee provided the vesting conditions are met and therefore the employee has only a *conditional or contingent right* to the option. It is only once the vesting conditions are fulfilled that the financial instrument is created and the company has an obligation to issue the underlying shares to the employee at the exercise price. (FASB, 1995:para. 124; Campbell, 1961:54; IASC, 2000:para. 6.10.) Thus, they hold that the option is an *absolute right* to subscribe for shares as opposed to a *conditional right*, which can only be obtained once the vesting conditions are fulfilled. (IASC, 2000:para. 5.28.) Consequently, they maintain that vesting date is the most appropriate measurement date to value ESOs and to base the related compensation expense as it is at this date that the instrument is issued and the company's obligations in terms of the ESOs are crystallised.

It should be noted that the proponents of vesting date, regard outstanding ESOs as “equity” on the accounting equation. (The discussion of whether outstanding ESOs are in fact equity or liabilities is discussed in further detail in paragraph 4.6.) The G4+1 Paper, which was in favour of vesting date accounting, felt that ESOs are in substance no different to other options like share purchase warrants. It declared that, unlike share purchase warrants, which are acquired for cash, employees pay for their ESOs with services and therefore the vesting conditions are not a term of the option contract, but rather are the consideration paid for obtaining the option. Like share purchase warrants, which are only recorded once the purchaser has purchased the option, ESOs can only be fully recognised and valued once the employee has fully purchased the options with his services, which is at the vesting date. (IASB, 2000:para. 5.32.) Similarly, SFAS 123 notes that at the date a share purchase warrant is issued by the reporting enterprise, the investor does not have to satisfy any further conditions to be eligible to retain or exercise his rights under the option. Therefore, for consistency, an ESO can only be assumed to be *issued and* correctly valued at vesting date, when the employee is in the same position as a third party holder of a share purchase warrant. (FASB, 1995:para. 125.) In addition, the G4+1 paper favoured vesting date treatment because at this date, the employee’s services are valued at a price that reflects the performance in the share price achieved till this date (IASB, 2000:paras. 5.34).

It is contended that although the logic behind vesting date accounting is sound, the model fails to take into account the fact that vested ESOs can expire unexercised resulting in such ESOs having no cost to the company. Thus, by assuming ESOs are issued at the vesting date does not allow for changes in the value of the ESOs after this date. This is discussed in further detail in paragraph 4.5.5.

#### 4.5.3. Service date

Service date is the date when the employee renders his services necessary to become unconditionally entitled to the share option (IASB, 2002a:para. BC83). Advocates of service date accounting also regard outstanding ESOs as “equity” on the accounting equation and use a hybrid method of vesting date accounting. They feel that the *earning* of ESOs by the employee and the *issue* thereof by the company, is a continuous process like other forms of compensation and the measurement date

should not be fixed either at the beginning or end of the vesting period. Instead, they feel that because the ESOs are earned and issued incrementally over the service period, the measurement date should be a continuous process whereby the fair value of the ESO instrument granted to the employee would be determined daily based on the daily movements in the underlying share price during the service period (or an average share price movement for the relevant period). In this way, the compensation cost is to be recognised as and when the services are rendered based on share price changes occurring at the date such services are rendered. Compensation expense would therefore not be determined as the increment (or decrement) in the ESO's value adjusted retroactively at the end of each year for changes in ESO value. (FASB, 1995:paras. 126-128; IASC, 2000:para. 5.25.)

Other proponents justify service date accounting by saying that there is a correlation between changes in the fair value of the equity instrument and the fair value of the services received by the company. They put forward the argument that if the fair value of an option falls, so does its incentive effects, which causes employees to reduce the level of services provided for that option, and/or demand extra pay. Furthermore, if the fair value of an option falls because of a general decline in share prices, pay levels also fall, and therefore service date measurement reflects this decline in pay levels. (IASB, 2002a:para. BC88.) However, the main reason why service date is rejected as an appropriate measurement date, is that it assumes that the ESO instrument is issued progressively over time, whereas most financial instruments are only issued at one specific date (IASB, 2000:para. 5.26). In the case of ESOs, although the employee performs his services over the service period, it is the *completion* of such services, which occurs at one date (i.e. the vesting date) which determines whether or not the employer *issues* the ESO. Hence, the assumption of service date accounting that the employer is continually issuing the ESO over the vesting period is incorrect since the issue of ESOs does not occur over multiple periods of time. (IASB, 2000:para. 5.33.) Furthermore, it is suggested that the computation of the fair value of the ESOs on a daily basis would be extremely difficult and highly impractical. It can therefore not be an appropriate measurement date.



#### 4.5.4. Grant date

Grant date is the date when the entity and the employee enter into an agreement, whereby the employee is granted rights to the share option, provided that specified vesting conditions are met, such as the employee remaining in the entity's employment for a specified period (IASB, 2002a:para. BC83). Supporters of grant date accounting are of the opinion that by granting ESOs to the employee, the entity has in effect *issued* equity instruments to the employee at this date because the entity becomes unilaterally obligated at this date to issue the ESO to the employee. This date of issuance is deemed to be the measurement date. Therefore, the company must take into account all restrictions like forfeitability and non-transferability in order to value the instrument at grant date. In addition, because the ESO is considered to be an equity instrument *issued* to the employee at this date, it may not be subsequently adjusted to reflect differences between estimates and actual amounts of the ESO value. (FASB, 1995:paras. 122-123.) The reason is that accounting frameworks do not permit remeasuring an equity instrument after it has been issued. Consequently, ED 2, which favours grant date accounting, argues that the use of vesting date or service date accounting has the effect of remeasuring an equity instrument after the issue date. (IASB, 2002a:paras. BC87 & BC99). Being an equity instrument issued, the statement contends that any subsequent changes in the value of the ESO after grant date must be borne by the option holder in his capacity as owner and not as employee; hence no remeasurement would be permitted after this date (IASB, 2000:para. 5.18; IASB, 2002a:para. BC302).

However, it is contended that it is academically unsound to assume that the ESO is issued at grant date and its value thereby finalised. Rather, at grant date, the ESO is merely a conditional offer made to the employee to compensate him for his services contingent upon the ESOs vesting and being in-the-money at exercise date. Thus, to base the value of ESOs on their grant date value presumes that the ESO value is static which is contrary to the economics of the transaction. Instead, the employee performs services and is compensated for his services with an instrument whose value fluctuates until the ESO is exercised.

Others feel that grant date is appropriate as it reflects the arm's length value the company and employee had in mind when they agreed to the exchange transaction

and therefore valuation at the grant date meets the objectives of “fair value” as described in paragraph 4.3.5 above (Rouse & Barton, 1993:70; Campbell, 1961:54; IASC, 2000:para. 19; FASB, 1995:para. 121). Furthermore, Boudreaux and Zeff (1976:160) held that the correct measurement date for ESOs is the date on which the wealth transfer from the firm to the option holder comes into existence, which is the date the ESO is granted. Nevertheless, it is contended that the fair value of ESOs is a variable number which is only finalised at exercise date. This is contrary to grant date accounting which relies on the ESO’s value at grant date as being the ESO’s value throughout its life.

#### 4.5.5. Exercise date

The exercise date is when the option is exercised or expires (FASB, 1995:para. 120). Proponents of exercise date accounting deem that the ESO is only *issued* at exercise date. Until then, any outstanding ESOs are classified as liabilities as opposed to equity. Reasons for this are explained in paragraph 4.6.3. The outstanding ESOs are marked-to-market each period-end until they are ultimately exercised or lapse, whichever is earlier. Effectively, it is only at the exercise date when the outstanding ESOs are converted to equity if they are in-the-money at this date. Otherwise, they lapse unissued if they are out-of-the-money at expiry date. Proponents of exercise date argue that basing the measurement date on the exercise date trues up the compensation expense recognised for the ESO to equal the gain, if any, made by the option holder on the ESO. The reason is that if the ESO is exercised, the ESO will ultimately be valued at its intrinsic value at the exercise date which is equal to the gain made by the optionee. However, if the ESO expires unexercised, the ESO will be valued at zero which is equal to the zero gain made by the optionee. (IASB, 2000:para. 5.14; IASB, 2002a:para. BC92.) Therefore, exercise date accounting extends the measurement date beyond the vesting date which results in the eventual cost of the ESOs to the company being reflected in the accounts. This is in contrast to the other measurement dates which do not allow the fair value of the ESO to wind down to its fair value at the exercise or expiry date.

## 4.6. CLASSIFICATION OF ESOs ON THE ACCOUNTING EQUATION

### 4.6.1. Introduction

The discussion of whether outstanding ESOs are liabilities or equity or even a further class of claims on the entity's assets has been explored in the academic literature. The above classification is crucial because, as mentioned in paragraph 4.5.4, once an equity instrument is *issued*, it is not subsequently remeasured in the issuer's financial statements. This contrasts with liability instruments, which are subsequently remeasured at the end of each period until the liability is extinguished. (IASB, 2000:para. 3.8 & 5.13.) Furthermore, exercise date accounting is only possible if outstanding ESOs are classified as liabilities (IASB, 2000:para. 5.13). In the following paragraphs, an analysis of the various arguments put forward for the appropriate classification of outstanding ESOs is presented.

### 4.6.2. Arguments in favour of equity classification

A liability is defined in the IASB Framework as follows:

“a present obligation of the enterprise arising from past events, the settlement of which is expected to result in an outflow from the enterprise of resources embodying economic benefits [or assets]” (IASB, 1989:para. 49(b)).

A very similar definition appears in SFAC 6 (FASB, 1985:para. 35). Both the IASB Framework and SFAC 6 define equity as “the residual interest in the assets of an entity that remains after deducting its liabilities” (IASB, 1989:para. 49(c); FASB, 1985:para. 49).

As stated in Chapter 3 (para. 3.7), the plain economics of an ESO is that the company (the option writer) is obliged to issue its shares to the employee (the option holder) at the exercise price instead of the market price. The obligation to issue the underlying shares at a discount to the market (albeit after vesting date), meets the “obligation” requirement of the liability definition. However, because the ESO obligation is to be settled by the transfer of the company's shares at the exercise price, which are not “assets” or “economic benefits” of the entity, outstanding ESOs do not meet the definition of a liability. Therefore, the IASB concluded that outstanding ESOs are to be classified as equity which is not remeasured after issue date (IASB, 2000:para. 5.16; IASB, 2002a:para. BC97).

From an American perspective, in late 1988 the FASB added to its agenda a project to reconsider the definitions of equity and liabilities as contained in SFAC 6. In August 1990, a Discussion Memorandum entitled *Distinguishing between Liability and Equity Instruments and Accounting for Instruments with Characteristics of Both*, was issued. More than 90% of the respondents to the Discussion Memorandum said that a company's obligation to issue its own shares is an equity instrument because the company does not have to transfer its assets in settlement thereof since a company's own shares are not assets of the company. Therefore, on the basis of this, the FASB concluded that outstanding ESOs and share purchase warrants granted by the company were equity instruments and therefore exercise date accounting would be inappropriate. The proposed amendments to SFAC 6 were thus disbanded in February 1992. (FASB, 1995:paras. 149 & 371-372.)

However, on 27 October 2000 the FASB issued two exposure drafts, namely, *Proposed Amendment to FASB Concepts Statement No. 6 to Revise the Definition of Liabilities* (ED E-159) and *Proposed Statement of Financial Accounting Standards: Accounting for Financial Instruments with Characteristics of Liabilities, Equity or Both* (ED E-158) and on 15 May 2003 it issued Statement No. 150 (SFAS 150) – *Accounting for Certain Financial Instruments with Characteristics of both Liabilities and Equity*. ED E-158, in contrast to SFAC 6, required that obligations that require or permit settlement by issuance of the entity's shares to be classified as liabilities if they do not establish an "ownership relationship" (FASB, 2000b:paras. 169-170). On the other hand, ED E-158 required that instruments that are in substance identical to equity instruments, must be classified as equity even though on a strict reading of SFAC 6 they would be classified as liabilities (FASB, 2000b:para. 180).

Both ED E-158 and ED E-159 declared that in order for an obligation to be classified as equity and constitute an "ownership relationship", any benefits or risks of changes in the value of the obligation must stem directly from changes in the fair value of the issuer's equity shares and be similar to those risks or benefits that would be realised by a holder of an outstanding equity share of the entity (FASB, 2000b:para. 182; FASB, 2000a:paras. 3-4). To make such determination, these exposure drafts looked to whether the *monetary value* of an obligation is caused by, equal to, and moves in the same direction as changes in the fair value of the issuer's equity shares

throughout the period that the obligation is outstanding (FASB, 2000b:para. 184). ED E-158 stated that the term “monetary value” is not a measurement of the price that the issuer would be required to pay to be released from the obligation currently (i.e. its fair value). Instead, it is the amount of value that the issuer would have to convey to the holder at maturity under the contractual terms of the obligation presuming the fair value of the issuer’s equity shares does not change. (FASB, 2000b:para. 183.)

Therefore, it is the symmetrical relationship between changes in monetary value of the instrument and the fair value of the issuer’s equity, which is important in making the distinction between equity and liabilities (FASB, 2003b:para. B39). In the case of ESOs, it is submitted that because the monetary value of the instrument (i.e. its intrinsic value) moves in tandem with the fair value of the entity’s shares, equity classification under ED E-158 would be appropriate for ESOs.

However, such conclusions are not without contention. SFAS 150 notes that because a call option has the possibility of never being exercised, returns to the option holder may differ from returns to the shareholder (FASB, 2003b:para. B40). Hence, because ESOs are a type of call option which have a definite possibility of not being exercised, they would be classified as liabilities under SFAS 150. SFAS 150 (para. 17) overcomes this issue by excluding ESOs from its scope. This suggests that the classification of ESOs as equity is not so straightforward.

#### **4.6.3. Arguments in favour of liability classification**

A share appreciation right (SAR) is a right granted to an employee in which he receives in cash or shares, an amount equal to the appreciation in the market price of the company’s shares over a specified period of time which may be subject to certain vesting conditions (IASB, 2000:para. 7.45; Balsam, 1994:55). An example would be a cash bonus linked to the price of the entity’s shares (FASB, 1995:para. 133). The main difference between a SAR and an ESO is that with an ESO, at exercise date the employee must first purchase the shares at the exercise price and then sell them to realise a profit. However, with a SAR, the employee is awarded the appreciation in the share price directly in the form of cash or shares. (Balsam, 1994:55.) Balsam (1994:55) correctly argued that SARs and ESOs are economically equivalent transactions as the compensation/ profit to the employee and the eventual cost to the

firm are identical. Similar sentiments were noted by the IASB (2002a:para. BC115) and by Nadel, Haines and Kopp (2003:19).

For *cash-settled* SARs, under present US GAAP, FIN 28 requires the SAR to be classified as a liability. Prior to vesting, the SAR must be marked-to-market based on its intrinsic value and charged to the income statement on a straight-line basis over the vesting period. (FASB, 1978:paras. 2-3.) Subsequent to vesting, FIN 28 requires that at the end of each period the full movement in the SAR's intrinsic value to be charged to the income statement until the earlier of exercise of the ESOs or the expiry date (FASB, 1978:para. 4). A similar approach was adopted for SARs in the G4+1 Paper and SFAS 123 (IASB, 2000:para. 7.49; FASB, 1995:para. 338). Although ED 2 requires option-pricing models, as opposed to the intrinsic value, to be used to estimate the fair value of the SAR, it also proposed that the SAR should be classified as a liability on the balance sheet and remeasured each period (IASB, 2002d:paras. 31-34 & Appendix C).

The reason that a *cash-settled* SAR is classified as a liability is that it is an "obligation" which is to be settled with cash which is an "asset" of the firm (IASB, 2002a:para. BC226). Although not specifically mentioned, it would seem logical to conclude that *equity-settled* SARs should be treated like outstanding ESOs and classified as equity, since the company does not have an obligation to transfer an asset to the employee as the entity's own shares are not assets of the firm. ED 2 justifies such treatment and points out that with *equity-settled* transactions such as ESOs or equity-settled SARs, only one side of the transaction causes a change in the entity's net assets. The reason is that an asset (services) is received but no assets are subsequently disbursed, because the settlement of the transaction involves the issue of shares, which does not cause a change in the entity's net assets. Therefore, such transactions are not remeasured after grant date due to them being equity instruments. However, with *cash-settled* transactions like a cash-settled SAR, both sides of the transaction cause a change in net assets, i.e. an asset (services) is received and an asset (cash) is ultimately disbursed to pay for those services. Therefore a cash-settled SAR is accounted for as a liability and marked-to-market each period in order to reflect the dual change to net assets attributable to the transaction. (IASB, 2002a:paras. BC223-BC225 & BC236.)

Many disagree with such conclusions and contend that an obligation that is to be settled through the issue of shares or cash or a combination of both, should not change its classification as the transactions are commercially similar even though the settlement thereof is with different instruments. Hence, proponents of liability classification contend that ESOs, equity-settled SARs and cash-settled SARs are economic equivalent transactions which should be accounted for consistently by classifying all of them as liabilities. (FASB, 1995:paras. 132-133 & 369; IASC 2000, para. 5.15.) It is concluded that the liability classification is the correct method and the FASB and the IASB should not base their classification of ESOs by means of the existing definitions of elements of financial statements. The liability classification argument is compounded by certain problems that have crept in with the recent issuance of Exposure Draft 32/39 (ED IAS 32/39) – *Exposure Draft of Proposed Amendments to IAS 32 and IAS 39* in June 2002. ED IAS 32/39 states that a derivative contract (like a share option) may only be classified as an equity instrument if the contract will be settled by the exchange of a fixed number of an entity's own equity instruments (other than derivatives) for a fixed monetary amount of cash or other financial assets (IASB, 2002c:para. 29C). A similar definition appears in IAS 32 - *Financial Instruments: Disclosure and Presentation* (IASB, 1995:5). In certain ESO contracts (like variable option plans) or equity-settled SARs, the number of options to which employees are entitled to varies depending on performance targets (IASB, 2002a:paras. BC108-BC109). Therefore, it can be argued that variable ESO plans would be classified as a liability under IAS 32 and ED IAS 32/39 and fixed ESO plans would be classified as equity. Although the IASB noted such inconsistencies, it concluded that all outstanding ESOs should still be classified as equity as the distinction between equity and liabilities is an issue that would need to be addressed on its own as it would have too many ramifications on other areas of accounting (IASB, 2002a:para. BC112). The IASB have thereby acknowledged the arguments for liability recognition are sound yet in the mean time it has proposed equity classification of ESOs instead. This suggests that classification of ESOs as liabilities has definite academic grounds to it.

Further justification for classification of an ESO as a liability is given by certain proponents who argue that assets, liabilities, income and expenditure should be recognised in the entity's financial statements solely by reference to their effects on

the *existing body* of equity holders of the entity. Such approach is termed the *proprietary approach*, which assumes that only current shareholders are to be regarded as equity claimants. However, most accounting standards follow the so-called *entity approach*, which regards current equity holders as well as future and potential equity holders (which includes ESO holders), as equity claimants. Proponents of liability classification for ESOs favour the proprietary approach and argue that the effect of transactions between potential equity holders and current equity holders must be reflected in the financial statements (Kirschenheiter, Mathur & Thomas, 2002:3). Because ESO holders are not currently equity holders, the ESO instrument should not be classified as equity. Instead, it should be classified as a liability which thereby shows the exposure the existing shareholders have to the potential opportunity cost of foregoing the potential proceeds from issuing the company's shares at their market price. This is explained in more detail in paragraph 4.7.7.

Finally, Kirschenheiter, Mathur and Thomas (2002:3) found that by making use of the proprietary approach and classifying outstanding ESOs as liabilities, it recognises the economic substance far better since it ensures that the classical finance relations in terms of the level and growth of profitability and cash flows are maintained.

#### **4.6.4. Arguments in favour of contingent claim classification**

A further school of thought does not regard option holders as part of the ownership group nor do they regard them as liabilities. Smith and Zimmerman (1976:358) declared that since ESOs are only exercised after grant date, they represent an outstanding contingent claim on shareholders' equity. In fact, Rubenstein (1994:25), who supported exercise date accounting, suggested that the FASB classify ESOs as a third class of securities on the balance sheet. Such securities would be treated like liabilities and by using exercise date accounting, the financial statements would show the realised returns that such security holders would be receiving as opposed to the expected return, which is what is estimated when classifying ESOs as equity. (Rubenstein, 1994:25.) Similarly, Hull and White (2003:5) commented that ESOs are neither debt nor equity and therefore a third category of contingent claims should be added to the liabilities side of the balance sheet, which would encompass all



convertible instruments, options and ESOs. It is felt that these proponents would still need to decide whether ESOs must be remeasured each period or not.

## 4.7. ALLOCATION OVER THE SERVICE PERIOD

### 4.7.1. Introduction

ESOs are a form of compensation granted to employees in consideration for their services. In accordance with the accrual concept, as services are rendered over a period of time, it is appropriate that a charge be made for the associated compensation expense over the period of service, irrespective of the measurement date adopted since the term “measurement date” refers only to the date when the value of the ESO is *finally determined* and not when it is *accrued* in the financial statements. (IASB, 2000:para. 6.1; FASB, 1995:para. 120 footnote 15.) This is consistent with the fact that ESOs are executory contracts at grant date and the transaction is recognised per the accrual concept as and when services are performed by the employee over his service period. Consensus among the accounting standards examined below in paragraphs 4.7.2-4.7.6 is that this service period does not extend beyond the vesting date. The reason is that extending the attribution period to beyond the vesting period (for example till the date that all employment related conditions that might shorten the option term have expired or until the expiry date) is inconsistent with the economics of an ESO contract. This is because at vesting date, the right to retain or exercise the ESO is at the discretion of the employee, irrespective of the subsequent service he may perform to his employer beyond the vesting period. Hence, it is at vesting date when the employee’s services rendered to obtain the option cease. Therefore the attribution period is not extended beyond the vesting date. (FASB, 1993:paras. 143-144.) This is consistent with the accrual concept of accounting since the employee renders no services after vesting date, hence no further cost can be accrued for the ESOs. This does not preclude the recognition of changes in the value of the ESO instrument’s fair value after the vesting date. Therefore, in the case of exercise date accounting, adjustments to the ESO cost occur even after vesting date for reasons explained in paragraph 4.7.7.

This section delves into the various accounting models for ESOs suggested by the FASB, the IASB and other academic literature. For each model, it discusses the

manner in which the accounting model serves to recognise the ESO as a form of compensation over the employee's period of service. It is also assumed that outstanding ESOs are classified as equity on the balance sheet unless stated otherwise. It is not the intention to give a comprehensive review of the accounting treatment for all possible ESO plans as this is beyond the scope of this study. Rather, the basic accounting treatment of a plain vanilla ESO plan is analysed below. The accounting for some of the more exotic features of ESO contracts is explored in more detail in Chapter 5.

#### 4.7.2. APB 25

APB 25 was issued by the FASB in October 1972 and is essentially an expansion of ARB 43 issued in June 1953. Although not a statement on its own anymore, US companies are still permitted to use its requirements as an alternative to the recognition model in SFAS 123 as described in paragraph 4.7.3 (FASB, 1995:para. 11). APB 25 only deals with transactions involving employees and therefore customers and other non-employees do not fall within the scope of APB 25 (APB, 1972:para. 4). Under APB 25, share plans are generally either "non-compensatory plans" or "compensatory plans". Generally, the only plans that are non-compensatory are Employee Stock Purchase Plans (ESPPs) that qualify under section 423 of the Internal Revenue Code (known as "section 423 plans"). Non-compensatory plans, as their name suggests, are not intended to compensate employees and therefore no compensation expense is recognised for such plans under APB 25. (APB, 1972:para. 7.)

On the other hand, for compensatory plans, APB 25 requires that the intrinsic value be used to measure the compensation cost at the "measurement date" as defined in APB 25 (APB, 1972:para. 10). APB 25 defines the term "measurement date" as the first date on which both the number of shares the employee is entitled to receive and the exercise price are known (APB, 1972:para. 10). Plans in which such variables are known at grant date are called *fixed plans* and plans for which such variables are not known (for example plans which utilise future corporate performance measures to determine the option terms) are called *variable or performance plans* (Nadel, Haines & Kopp, 2003:11).

#### 4.7.2.1. Accounting for fixed plans under APB 25

For fixed plans, because both the number of shares the employee is entitled to and the exercise price are known at the grant date, the measurement date is the grant date. Because the expense is to be based on the ESO's intrinsic value at the measurement date, a zero expense is to be recognised if the exercise price is above or equal to the market price of the shares at grant date. (APB, 1972:para. 10.) However, if the exercise price is below the market price of the underlying shares at grant date, the total intrinsic value of the option award at grant date is to be recognised on a systematic basis over the total service period (or vesting period if this is not known) by debiting compensation expense and crediting a share options account in equity each period. Only if an employee terminates his services and causes his non-vested fixed plan ESOs to be forfeited, is the cumulative compensation expense associated therewith reversed out. The cumulative compensation cannot be adjusted in any other circumstance for the reasons described in paragraph 4.7.3. Should the employee exercise his fixed plan ESOs, assets are debited with the exercise proceeds, share capital (and share premium) account(s) is credited with the market price of the shares issued and the share options account in equity is debited with an amount equal to its balance attributable to the exercised fixed plan ESOs at the exercise date. The balancing figure is charged to the income statement as compensation expense. (Nadel, Haines & Kopp, 2003:13-14, 16-17 & 45.)

The most obvious problem with this method is that it makes use of the intrinsic value approach instead of the fair value approach for valuing ESOs. This causes manipulation as evidenced by the events in the United States in chapter 3 (para. 3.2.1.1) Appendix A contains an illustrative example of the application of APB 25 to a fixed option plan.

#### 4.7.2.2. Accounting for variable plans under APB 25

For variable plans, FIN 28 provides guidance as to the accounting treatment thereof (FASB, 1978:para. 2). FIN 28 requires that the compensation expense for variable plans must accrue in a manner similar to a SAR (FASB, 1978:paras. 2-3). The measurement date is only when both the number of shares the employee is entitled

to receive and the exercise price are known. In the interim periods leading up to the measurement date, the company must recognise compensation expense for the variable plan ESOs according to the so-called *variable accounting methodology* over the period of the employee's service. (APB, 1972:para. 13.) To do this, at each reporting period leading up to the measurement date, the company must provisionally determine the total number of ESOs the employees under the option plan are entitled to, based on the satisfaction of the relevant performance criteria to date, and multiply this by the intrinsic value per option at the reporting period. This value (which is limited to zero) is then multiplied by the completed portion of the service period (or if this period is not defined, it is presumed to be the vesting period), which gives the cumulative compensation expense. The compensation expense to be debited to the income statement is the abovementioned cumulative expense less the cumulative compensation expense recognised in the previous period. The credit side of the entry would be charged to a share options account in equity. (Nadel, Haines & Kopp, 2003:23-26.) This procedure continues up until the measurement date whereafter the total compensation expense is finalised (Nadel, Haines & Kopp, 2003:25).

Like fixed plan ESOs, FIN 28 provides that should non-vested variable plan ESOs be forfeited or cancelled due to non-fulfilment of vesting conditions, the cumulative compensation cost associated therewith, should be reversed in the period of forfeiture (FASB, 1978:para. 4). However, if the variable award expires unexercised or is cancelled for any reason other than forfeiture, any compensation expense recognised therewith should not be adjusted (Nadel, Haines & Kopp, 2003:14). The reason for such treatment is identical to SFAS 123 and is explained in paragraph 4.7.3. Should an employee exercise his variable plan ESOs, the same entries as a fixed option plan as described in paragraph 4.7.2.1 above are made (Nadel, Haines & Kopp, 2003:45). Once again, variable plan accounting under APB 25 has its limitations owing to the fact that it uses intrinsic value as the measurement model and it provides inconsistent treatment of economically equivalent transactions, namely fixed plans and variable plans.

#### 4.7.3. SFAS 123

SFAS 123 was issued by the FASB in October 1995 and currently applies to all share-based employee compensation plans in the United States (except for

Employee Stock Ownership Plans (ESOPs)) in which a company grants shares or other equity instruments to its employees or non-employees and it also encompasses SAR plans (FASB, 1995:para. 6). As mentioned in Chapter 3 (para. 3.2.1.3), the statement recommends, but does not require, that companies recognise the fair value, rather than the intrinsic value, of ESO plans as an expense. It permits companies to continue applying APB 25 to their ESO plans, but then requires that such companies disclose in a note to the financial statements what their earnings and earnings per share (EPS) would have been had they applied the fair value method of accounting under SFAS 123. (FASB, 1995:11.) This was the major limitation of this standard which effectively made the recognition model redundant since US companies preferred using the allowed alternative disclosure model so as to recognise a zero expense for their ESOs. The following paragraphs focus only on the elements in SFAS 123 dealing with ESOs issued to employees using the recognition accounting model proposed by SFAS 123.

In essence, SFAS 123 regards outstanding ESOs as equity instruments and favours the grant date as the measurement date for ESOs. The reason given is that this is the date that the employer and employee decide on the number of options to be granted which is a function of the share price at grant date and not the possible share price in the future. Hence, it concludes that measurement at grant date best reflects the arm's length transaction between the employee and the employer. (FASB, 1995:paras. 121 & 157.) However, the FASB held that an ESO instrument subject to vesting or performance conditions is not considered *issued* until the entity has received the full consideration from the option holder in the form of his services rendered and he has no further obligation to the entity. Thus per SFAS 123 it is only at the vesting date that the ESO is considered issued. SFAS 123 therefore uses a measurement date that combines attributes of both grant date and vesting date measurement. (FASB, 1995:para. 96.) A close reading of SFAS 123 (para. 158) would suggest that although the FASB may have considered the vesting date a more appropriate measurement date, to give effect to such proposal would have resulted in volatility in reported earnings during the vesting period. This would have made it unlikely that entities would adopt the recognition model of SFAS 123. Hence, a hybrid of grant date and measurement date accounting was proposed as described below. This is a further

example of how the FASB had to bow down to political and business pressure and was thereby forced to promulgate a less academically sound requirement.

The statement declares that at grant date, the employee is *offered* a conditional right to an equity instrument (the ESO) in exchange for his services, with such instrument (the ESO) only being *issued* if the performance conditions are performed at the vesting date. During the performance period, the employee will either fulfil the vesting conditions and be issued the ESO instrument (the employee's *conditional* right crystallises to an *actual* right) or he will not perform the requisite services and therefore the offer will be forfeited (the employee's conditional right lapses). (FASB, 1995:para. 17.) Therefore, the statement requires that the fair value of the ESOs be measured at grant date, since this is the most appropriate measurement date, but the total compensation cost is to be based only on the number of ESOs that actually vest, which can only be finally determined at vesting date. It is submitted, that this results in asymmetry since the number of ESOs are adjusted for changes in their value yet the fair value per ESO is not adjusted. Therefore, the financial statements do not show the opportunity cost of the ESOs to the company. Like APB 25, the compensation expense accrued in respect of non-vested options that are forfeited (e.g. the employee terminates his service contract before vesting) is reversed out (FASB, 1995:paras. 29). The reason for such treatment is that for both SFAS 123 and APB 25, ESOs are only considered to be *issued* at vesting date, hence forfeiture before then implies that such ESOs are never to be issued (they are conditional rights which never crystallised), which means the entity has no obligation to pay for such services received for the ESOs. Consequently, no compensation cost is recognised for non-vested awards that lapse. (FASB, 1995:paras. 167.) This is consistent with the economic nature of non-vested ESOs that lapse because the opportunity cost of such ESOs is zero and the employee has not benefited at all from them. Therefore it is appropriate that no cost be recognised for such ESOs.

Like APB 25, SFAS 123 requires that the total compensation cost associated with the ESOs must be recognised in the period in which the employee renders the requisite services to the company in accordance with the accrual concept (FASB, 1995:para. 200). To do this, the entity first estimates the *fair value* of an option granted under the ESO plan at grant date, after making the relevant adjustments described in paragraph 4.4.2.3 but not adjusting for the effects of possible forfeitures of non-

vested ESOs. Instead, such potential forfeiture is incorporated into the accrual of the compensation expense as described below. (FASB, 1995:paras. 17 & 19.) The entity has two alternatives as to how it will accrue the compensation cost:

- The first alternative requires that at grant date, the company must estimate the expected *number* of options under the relevant scheme that are to vest based on an expected forfeiture rate. Should the number of options to vest also be dependent on a performance condition, the number of options is to be further adjusted for management's best estimate of the outcome of the performance condition. (FASB, 1995:paras. 28 & 306.) The expected number of options is then multiplied by the fair value per option, which gives the total estimated compensation cost for all the employees' future services in exchange for the option. However, this amount is not expensed immediately. Rather, the total compensation cost is to be recognised over the service period of the employees or if such period is not defined, the vesting period. (If the award is in respect of past services, the total compensation cost is to be recognised in the period in which it is granted.) The journal entry for the compensation expense over the service period is to debit compensation expense and credit a share options account in equity. (FASB, 1995:paras. 30 & 196.) This recognises the fact that the employees only have a contingent right to a *portion* of the ESOs and such portion increases in size as the vesting period draws to a close. However, should there be a subsequent change to management's estimate of the forfeiture rate or expected performance conditions, the total compensation expense accrued to date will need to be readjusted to reflect the new estimate of the *number* of options expected to vest. Similarly, at vesting date, a final adjustment is made to the compensation expense recorded, to true up the actual number of options that vested to the estimated number of options that were expected to vest. All such adjustments are to be treated as a retrospective change in accounting estimate to be recognised in the period of change. (FASB, 1995:paras. 29, 168 & 294.)
- The second alternative requires that at grant date, the company is to temporarily assume that **all** the options granted under the scheme are to vest. The total *number* of options granted is multiplied by the fair value per option, which equals the total compensation cost for the entire service contract. This total compensation cost is allocated over the service period and each period the

relevant amount is debited to compensation expense and credited to a share options account in equity. Between grant date and vesting date, as and when actual forfeitures occur for the non-vested options, the compensation expense accrued to date in respect of such forfeited options, is reversed. All such adjustments would also be treated as a retrospective change in accounting estimate to be applied in the period of the change. (FASB, 1995:paras. 28-30 & 168.)

It is submitted that the use of a choice between the two alternatives promotes inconsistency and incomparability between companies. Consequently, it is suggested that the FASB should remove such a choice as this encourages manipulation by companies and does not facilitate comparability.

The *fair value per option* estimated at grant date is not subsequently adjusted for changes in the share price of the underlying share, volatility, expected life of the option, dividends or the risk-free interest rate, whether such changes occur during or after the vesting period (FASB, 1995:para. 19). It is submitted that the reason for such treatment is that SFAS 123 uses the grant date as its measurement date. Consequently, changes in the valuation variables of the fair value per option do not detract from the values and conditions agreed by the employee and the company when negotiating the option at the grant date. However, adjustments are made for the *number* of non-vested options under the scheme that are forfeited by effectively not accruing any compensation expense associated therewith because SFAS 123 does not consider them issued until the vesting conditions are fulfilled as explained above. Nevertheless, by not remeasuring the ESO instrument after grant date, the financial statements do not show the opportunity cost of the ESOs since they are based on a historical value of the ESOs based on grant date. It is contended that remeasuring of ESOs after the grant date recognises the opportunity cost of ESOs far better.

After vesting date, no adjustment is made to reflect any early exercise of ESOs and differences between the initial estimates and later estimates or outcomes (FASB, 1995:para.173). In addition, compensation expense is not reversed for the number of vested options that are cancelled or expire unexercised. Instead, when vested ESOs expire unexercised, a book entry is made whereby the share options account in equity is closed off to the share capital (and share premium) account(s). (FASB,



1995:paras. 26 & 297.) The reason for such treatment is identical to that of the G4+1 Paper, which applies a pure vesting date accounting treatment, and is explained in paragraph 4.7.5.

Upon exercise of the ESOs, assets are debited with the exercise proceeds, share capital (and share premium) account(s) is credited with the market price of the shares issued and the share options account is debited with an amount equal to its balance at the exercise date (FASB, 1995:para. 295). The way to account for the balancing debit or credit is not specifically addressed in SFAS 123. Presumably, one would think that since the exercise of an ESO is a capital transaction, the above difference would not be charged to the income statement, but would be charged to accumulated profit directly in the statement of changes in equity. Such conclusion is in line with ED 2 as mentioned in paragraph 4.7.6. Appendix A contains an illustrative example of the application of SFAS 123 to a fixed option plan.

#### 4.7.4. ED E-124

ED E-124 was issued by the FASB on 30 June 1993 and was repealed with the issuance of SFAS 123. Like SFAS 123, the standard favoured grant date accounting on the basis that the fair value of the ESO and the consequential compensation expense is determined using the share price at grant date – the date both the employee and employer agreed to the ESO's terms (FASB, 1993:para. 99). Although ED E-124 favoured a grant date accounting model, it did have some serious technical flaws to it that were not carried forward to the final standard, namely SFAS 123.

ED E-124 required the company to estimate the fair value of an ESO granted under the option plan at grant date (FASB, 1993:para. 20). Like SFAS 123, such fair value per option was to be determined using the ED E-124 valuation model as described in paragraph 4.4.2.3 without taking into account the effects of forfeiture of non-vested ESOs. The fair value per option would then be multiplied by the total number of options under the relevant scheme that were *expected* to vest (FASB, 1993:para. 11). The company would therefore be required to estimate a forfeiture rate at grant date so as to base the fair value of the option awards on an estimate of the number of options expected to vest. The statement did not permit the allowed alternative in SFAS 123 whereby companies could compute the total compensation cost based on

the assumption that all options are to vest and make adjustments for actual forfeitures as and when they occur. (FASB, 1995:para. 168; FASB, 1993:para. 125.)

The product of the number of options expected to vest and the fair value per option would be equal to the total estimated compensation cost over the total service period. At grant date, a credit would be made to a share options account in equity for the *total* estimated compensation cost. If the award were in respect of past services performed by the employee, the debit side of the entry would be charged to compensation expense. However, if the award were in respect of services to be performed in the future by the employee, the debit would be charged to an asset account called "prepaid compensation asset". Such account would be amortised to the income statement rateably over the period that the employee(s) would render the related service(s). If the service period were not defined, it would be deemed to be the vesting period. (FASB, 1993:paras. 20 & 201-204.) The result was that the compensation cost would be recognised as compensation expense over the period during which the employee performed his services to the company per the accrual concept (FASB, 1993:para. 142).

The logic behind such accounting treatment was that because ED E-124 favoured grant date accounting, the **total** value of the ESO would need to be recorded at grant date since the ESO would represent an equity instrument *fully issued* at the grant date. However for most ESO plans, such total value could not be recognised as an expense immediately since it represents compensation to be paid to the employee for his future services. It was therefore contended that such "payment" at grant date met the definition of an "asset" in terms of SFAC 6 due to the company granting options (past event) entitling it to future services from employees in order for them to earn the option (future benefits). It was argued that although a company cannot compel its employees to perform future services, it can cancel the ESOs if the agreed-upon services are not rendered. Therefore control over such future services is obtained in the same manner that any company would have legal recourse should it prepay for other professional services that are not provided. Hence the requirement of "control" per the definition of an "asset" in SFAC 6 was also met. Furthermore, it was noted that the ESO was not a *fully* executory contract due to the company having already performed part its side of the contract by issuing the ESO. (FASB, 1993:paras. 62-65; FASB, 1995:para. 150; FASB,1985:para. 25.) However, as explained in paragraph

www.manaraa.com

4.7.3 above, the FASB later retracted on such logic arguing that although grant date is an appropriate measurement date, the ESO is not *issued* at grant date but is only *offered* at that date. It held that it is only at vesting date when the instrument is issued which crystallises the ESO obligation. Instead it felt that the costs associated with the ESOs were to be accrued as and when the employee performs his services, which is his consideration to the company in exchange for the ESOs to be eventually issued at vesting date. (FASB, 1995:para. 95.) Furthermore, it is submitted that the comment by ED E-124 (para. 65) that ESOs are not fully executory contracts, is also unfounded since the employee has not performed any services to the employer at grant date nor has the employer performed anything to the employee at this date. The employer has only made a conditional promise to issue equity instruments if the performance conditions are met, but does not perform anything in terms of the contract at grant date. Hence the definition of an executory contract (refer to the glossary) is fully met at grant date and no transaction should be recorded at this date.

Like SFAS 123, ED E-124 also required that the estimated compensation cost at grant date to be adjusted for subsequent changes in the expected forfeiture rate and for differences between the estimated forfeitures and the actual forfeitures at vesting date. This adjustment would true up the *number* of options that were expected to vest to the number of options that actually vested allowing compensation cost to be recognised only for vested ESOs. (FASB, 1993:paras. 11 & 15.) However, the proposed statement also required companies to make an adjustment to the *fair value per option* for subsequent changes in the estimate of the options' lives after grant date or differences between the estimated lives of the options and their actual lives (FASB, 1993:paras. 15 & 198). The logic given for truing up the estimated lives to the actual lives of the ESOs was that this would account for the effects of non-transferability whereby the ESOs actual lives may differ not only from their maximum lives, but also from their expected lives estimated at grant date (FASB, 1993:para. 129). The proposed statement required that any adjustments to either the number of options forfeited or their estimated lives would be charged to the prepaid compensation asset recognised at grant date. Thereafter, the adjustment to the prepaid compensation asset would need to be re-amortised to earnings so as to reflect the correct compensation cost in the financial statements. Such adjustment

would be a retrospective change cumulatively recognised at the date of the change in accounting estimate. (FASB, 1993:paras. 127, 196-204.)

The fair value of the ESO at grant date would not be adjusted for subsequent changes in the underlying share price, dividend yield, risk-free interest rate and expected share price volatility (FASB, 1993:para. 15). Similarly, compensation cost recognised in respect of vested ESOs would not be reversed if any vested ESO expired unexercised (FASB, 1993:paras. 20 & 207). Although not specifically stated, the logic behind these two requirements is that an equity instrument cannot be adjusted after it has been issued to reflect changes in its fair value. However, it is submitted that ED E-124 is self-contradictory. The reason is that if ED E-124 regarded grant date as the issue date for ESOs, no subsequent adjustments can be made to either the fair value per ESO or the estimate of the number of ESOs expected to vest. The reason is that because ESOs are regarded as equity instruments issued in full at grant date, they should be unaffected by subsequent changes in their fair value or by forfeitures after the issue date. However, ED E-124 required adjustments for both changes in forfeiture estimates as well as differences between estimated and actual lives of the ESOs after grant date. The FASB also noted the contradictions inherent in ED E-124 (FASB, 1995:para. 173). Finally, like SFAS 123, ED E-124 did not specifically address the entries that would be made should the employee in fact exercise his ESOs. It is suggested that the balancing debit or credit must be charged to compensation expense in the income statement as mentioned in paragraph 4.7.3 above. Appendix A contains an illustrative example of the application of ED E-124 to a fixed option plan.

#### **4.7.5. G4+1 Paper**

The G4+1 Paper was issued by the IASB in July 2000 and was subsequently replaced by ED 2 in November 2002. In contrast to SFAS 123, the accounting treatment that was proposed by the G4+1 Paper was a pure vesting date accounting method. Similar to SFAS 123, the G4+1 Paper held that the ESO is an absolute right which is not fully issued until vesting date (IASB, 2000:para. 6.12). It supported the view that ESOs and share purchase warrants are economically equivalent transactions and should be accounted for identically. In the case of share purchase warrants, the entity receives the cash from the investor in payment for the share

purchase warrants and the entity immediately issues them to the investor. With ESOs, the employee pays for the ESOs by first rendering his services and only then is he *issued* ESOs if all the vesting conditions are fulfilled. Consequently, the G4+1 Paper contended that while the employee's services are rendered over the vesting period, the employee is compensated with a conditional right to the ESOs contingent upon his fulfilment of the vesting conditions. Thus, during the vesting period, the employee is paying for his ESOs in the form of rendering services yet the entity only recognises an expense for such services to the extent that the ESOs are expected to or have already vested. The reason is that according to the G4+1 Paper, the entity only has an obligation to pay its employees ESOs that actually vest or that are issued. Thus, if the vesting conditions are not fulfilled the employee's conditional rights to the ESOs lapse and no compensation expense is recognised therewith. It is only if the vesting conditions are fulfilled, that the entity will issue the ESO instruments at this date (i.e. the vesting date) and the amount of the ESO compensation expense recognised to date is finalised or trued up to reflect the actual value of the ESOs issued at this date. According to the G4+1 Paper, such treatment reconciles the economic equivalence and accounting treatment of ESOs to a share purchase warrant which is only *issued* once the investor pays the requisite cash whereas ESOs are only issued once the employee has fulfilled the vesting conditions *and* fully paid for the ESOs with his services. (IASB, 2000:paras. 5.32, 6.6-6.12.)

To give effect to the G4+1 Paper's methodology, an *interim measure* must be made at the end of each reporting period until the vesting date, of the estimated value of the ESOs expected to vest, in order to recognise the partially completed transaction (IASB, 2000:paras. 6.12 & 8.3). To do this, the entity first estimates the fair value of an option granted under the ESO plan at the end of the first reporting period using an option-pricing model as described in paragraph 4.4.2.3 which is not adjusted for the effects of possible forfeiture (IASB, 2000:paras. 5.3 & 8.4). Like SFAS 123, the G4+1 Paper permitted the company to either estimate the total number of options which will vest using an estimated forfeiture rate or to account for the lapsed options as and when they occur (IASB, 2000:paras. 8.8. & 7.7). The product of the fair value per option and the number of options under the scheme which are to vest, equals the total compensation to be paid by the employee (and consumed by the employer) over the entire period, in exchange for the ESOs. Because services are performed

over a period of time before vesting, the total compensation cost must be multiplied by the completed portion of the service period, which equals the compensation expense accruing to date. At the end of the first reporting period, a debit is made for compensation expense and a credit is made to share options in equity, based on the total compensation cost accrued for the first period. (IASB, 2000:paras. 6.12-6.13 & 8.4.)

At every subsequent period-end until vesting date, the entity must redetermine the *fair value per ESO* based on changes in the input variables in the option-pricing model. This value is multiplied by either the new estimate of the *number* of options expected to vest or the number of unexpired options to date, depending on the entity's accounting policy. The above value is then multiplied by the portion of the service period performed to date which equals the revised total compensation cost accrued to date. The difference between this value and the total compensation cost accrued at the previous reporting period, represents the compensation expense for the relevant period. (IASB, 2000:paras. 6.13 & 8.4.) The G4+1 Paper noted that such treatment does not result in the remeasurement of an equity instrument. Rather it contended that the total ESO value determined at each period-end is merely an interim measure or estimate of the value of the ESO instrument that is to be issued and finally valued only at vesting date but whose consideration is received rateably over the performance period. Hence, both the number of ESOs outstanding and the fair value per ESO must be redetermined at the end of each period to recognise the partially completed transaction. (IASB, 2000:para. 6.12.)

The above treatment results in only vested ESOs being recognised as compensation. Such treatment is consistent with the G4+1 Paper's view that ESOs are issued only at vesting date. ESOs which lapse before vesting date, imply that the entity has no obligation to pay for such services with ESOs resulting in the enterprise receiving the employee's compensation in respect of such ESOs for free. Accordingly, the treatment proposed by the G4+1 Paper results in any amount included in the compensation expense in respect of forfeited non-vested ESOs being reversed out. (IASB, 2000:para. 7.9.) At vesting date, a similar adjustment is made to reflect the actual number of ESOs that vest **and** the fair value thereof. This results in the previous estimates of both the number and the fair value of ESOs expected to vest at vesting date being **trued-up** to the actual number and fair value of the ESOs issued at

this date (IASB, 2000:para. 6.11). This is in line with the view that the transaction is now only completed at vesting date and the obligation to issue the ESO is crystallised at this date. In this way, the total transaction amount recognised at vesting date equates to the total fair value of the ESOs vested and therefore issued at this date. (IASB, 2000:paras. 6.12.) Use of the above accounting model reflects the underlying relationship between the cost of ESOs to the company and the services rendered far better than SFAS 123. By remeasuring both the number of ESOs outstanding and the fair value per ESO after grant date, it reflects the potential opportunity cost to the company which is contingent upon the vesting of the ESOs.

Like SFAS 123, the G4+1 Paper concluded that where vested options lapse for whatever reason subsequent to vesting date, no adjustment is to be made to the transaction amount previously recognised (IASB, 2000:para. 8.9). Three reasons were given for such treatment. Firstly, with vested options, the company has *issued* options (equity instruments) in exchange for the employee's services. Such transaction occurs at vesting date and the subsequent lapse of the option does not change the fact that the issue of an equity instrument has already occurred (IASB, 2000:para. 7.13). In contrast, for non-vested options that expire unexercised, the transaction involving the issue of equity instruments was not completed (since this can occur only at vesting date) and the expense must therefore be reversed because the entity made no issue of an equity instrument for such services received (IASB, 2000:para 7.9). Secondly, since the G4+1 Paper regarded ESOs as equity instruments, the fall in their value cannot result in a gain or loss to the entity as it does not change the net assets of the entity (IASB, 2000:para. 7.14). Finally, the treatment of leaving lapsed vested ESOs within equity is consistent with the treatment of other options that lapse unexercised (IASB, 2000:para. 7.16). The entity may however make a transfer within equity from the share options account to share capital (and premium) which would be for presentation purposes only (IASB, 2000:para. 7.17).

It is submitted that the G4+1 Paper's method only recognises the one leg of the contingent nature of ESOs since it does not make adjustments for vested ESOs that are out-of-the money at exercise date. Consequently, the opportunity cost of ESOs is not recognised fully in the financial statements using vesting date accounting. It is only exercise date accounting which makes this adjustment.

The G4+1 Paper also did not specifically address the entries that would be made should the employee in fact exercise his ESOs. It would seem that a similar entry to that suggested in paragraph 4.7.3 with respect to SFAS 123, would be made upon exercise of the ESO whereby any balancing figure is charged to accumulated profit in the statement of changes in equity. Appendix A contains an illustrative example of the application of the G4+1 Paper to a fixed option plan.

#### 4.7.6. ED 2

In essence SFAS 123 and the G4+1 Paper contend that during the vesting period, the entity receives services and pays for them with contingent rights to ESOs. During the service period, the entity merely makes an interim measure of the ESOs expected to be issued which is only finalised at vesting date and it accrues compensation expense based on this. In contrast, ED 2, which was issued by the IASB in November 2002, applies a pure grant date method of accounting. Consequently, as and when the employee's services are rendered over the vesting period, the entity *issues* a portion of *actual* equity instruments (i.e. ESOs) (as opposed to contingent rights thereto) in exchange for the employee's services. (IASB, 2002d:para. 14 & Example 1 of Appendix B.) Unlike ED E-124, although ED 2 follows a grant date method of accounting whereby the ESOs are valued at grant date, it still regards ESOs as being executory contracts whereby the ESOs can only be *issued* as and when the employee performs his services. Hence a prepaid compensation asset is not recognised at grant date like ED E-124 since no portion of the ESOs can be considered issued until the employee has begun rendering his services which occurs after grant date.

Therefore, according to ED 2 the issue of ESOs in exchange for the employee's services must be treated identically to the issue of any other equity instrument for cash or other assets. When an entity issues shares in exchange for goods or services, the entity first determines the fair value of the goods or services received (net assets) in exchange for the issue of the equity instruments. The reason given is that financial accounting focuses on the left hand side of the accounting equation (i.e. assets less liabilities or net assets) and changes in equity are merely determined by changes in net assets. For example, should a company issue shares in exchange for



a machine, the fair value of the machine is determined and a corresponding entry is made to equity. Therefore, the value of the net assets is determined first, and the effect on equity, flows from there. (IASB, 2002a:paras. BC59-BC61.)

Applying the above logic to ED 2's approach, should an employee perform services in exchange for the issue of ESOs, the fair value of the services received (net assets) must be determined first and a corresponding entry is to be made to equity. However, in the case of employee services, such determination is very difficult to make. To resolve such practical difficulties, ED 2 requires that the company measure the fair value of the employee services received *indirectly* by reference to the fair value at grant date of the ESOs granted. In other words, the right hand side of the accounting equation (i.e. the fair value of the ESOs granted) is used as a surrogate measure of the fair value of the net assets received (i.e. the services received). (IASB, 2002d: paras. 7-8 & 11-12.) ED 2 concludes that basing the fair value of the ESO at grant date is most appropriate as it is at this date that the fair value of the services expected to be received is substantially the same as the fair value of the ESO instruments granted (IASB, 2002a:para. BC90).

Thus, the objective is for the entity to determine the value of each unit of service being received over the service period. To do this, ED 2 requires that the entity must first measure at grant date, the *fair value* of an ESO granted under the relevant scheme to the employee using an option-pricing model as described in paragraph 4.4.2.3. Such model may or may not be adjusted for the possibility of forfeiture, depending on the company's valuation policy. (IASB, 2002d:paras. 8, 20 & 24.) The fair value per option is then multiplied by the *number* of options granted under the scheme and multiplied by a forfeiture rate (if not already included in the option-pricing model) and this value is *deemed* to equal the estimated total fair value of the services which the employees have or will provide to the employer in consideration for their ESOs (IASB, 2002d:para. 11 & Example 1 of Appendix B).

ED 2 differentiates the entries to be made depending on whether the ESOs vest immediately or not. If the ESOs granted vest immediately, the entity recognises at grant date the **total** fair value of the services received by debiting compensation expense and crediting a share options account in equity. The reason is that the

employee has already fully rendered his services as consideration for the equity instruments issued to him. (IASB, 2002d:para. 13.)

However, if the ESOs granted do not vest until the employee has completed a specified period of service, the entity divides the total consideration to be received from the employee by the expected number of units of service it expects to receive from him in consideration for the ESOs. This value is deemed to be equal to the fair value of each unit of service to be subsequently received by the entity since this is the value that the employee and the employer locked into at grant date. To determine the expected number of units of service, the entity estimates at grant date the number of units of service it expects to receive during the vesting period from the employee(s). This estimate must take into account expected forfeitures during the vesting period. (IASB, 2002d:para. 15.) Each period until vesting period, the entity is deemed to have received and used-up services (assets) equal to the actual number of units of service received from the employee during that period multiplied by the deemed fair value per unit of service (IASB, 2002d:para. 15). The journal entry for the services received is to debit compensation expense and credit a share options account in equity thereby recognising the ESOs issued for such services.

It is argued that the ED 2 model fails to take into account that the objective when accounting for ESOs is to recognise the opportunity cost of the instrument to the company. By not remeasuring ESOs after grant date, the cost of ESOs recognised is an out of date number which is not relevant to the user since it is based on the grant date value of the ESOs which is not equal to the opportunity cost of ESOs. The opportunity cost of ESOs is dependent on changes in both the fair value per ESO and the number of ESOs outstanding, both of which are not adequately recorded using the ED 2 model. It is further contended that the units of service method of allocation is highly subjective and prone to error and manipulation. Rather, it is suggested that the allocation of the ESO cost over the service period using years or months is a far more practical solution than using units of service.

ED 2 notes that the amount recognised for services received during the vesting period may exceed or be less than the total fair value of the ESOs at grant date if the actual units of service differ from the expected units of service. However, ED 2 notes that its approach does not entail estimating the fair value of the options granted and

then spreading that amount over the vesting period. Rather, its objective is to account for the services subsequently received, because it is the receipt of those services that causes a change in net assets and hence a change in equity. Because of the practical difficulty of valuing those services directly, the fair value of the options granted is used as a surrogate measure to determine the fair value of each unit of service subsequently received. Therefore the transaction amount is dependent upon the *number* of units of service actually received and not the *fair value* of the ESOs granted. Consequently, if more units of service are received than expected, the transaction amount will be greater than the total fair value at grant date and if fewer services are received, the transaction amount will be less than the total fair value at grant date. (IASB, 2002a:para. BC200.) However, it is contended that ED 2's method of computing the ESO cost does not provide relevant and reliable information to users since it is not based on current information, but rather uses a historical value of the ESOs at grant date. The opportunity cost of ESOs will consequently not be reflected adequately in the financial statements.

Unlike any of the other accounting standards described in paragraphs 4.7.2-4.7.5, ED 2 states that should an employee forfeit his options before they vest, the entity does not reverse out the compensation expense recognised in respect of such employee. Rather, it is to stop recognising any further amounts of employee services in respect of that employee. (IASB, 2002d:para. 15.) This is in line with the fact that the entity has received the employee's services and already *issued* equity instruments for those services. Accordingly, no subsequent adjustment can be made to equity for the forfeited ESOs because there have been no changes to net assets and equity instruments may not be remeasured after they have been issued. (IASB, 2002a:para. BC207.) Although, this is consistent with the nature of equity instruments, it does seem odd that the company is recording a cost for an ESO instrument that cost it nothing. In addition, ED 2 requires that no changes be made to the fair value per option after the grant date nor is there any subsequent adjustment to total equity if any vested options are not exercised. However, the entity may make an internal transfer within equity by converting the existing share options account to share capital (and premium) upon the termination of the ESO instrument. (IASB, 2002d:para. 16.)

Like the G4+1 Paper, ED 2 also does not specifically mention how one should account for the balancing debit or credit that arises upon the exercise of the ESOs. Kimberly Crook, the IASB project manager on share-based payment, noted that the reason for not specifying an accounting treatment in ED 2 was that company law in most countries dictates how and where debits and credits can be made to share capital and premium accounts. Hence, no specific guidance could be given in ED 2 (and the G4+1 Paper) for this. (Crook, 2003.) However, if one assumes that outstanding ESOs are issued equity instruments, it is submitted that the issue of the underlying shares in settlement of the ESOs is an internal transfer from one equity claimant to another. Any discount or premium on issue of the underlying shares to settle the ESOs would therefore not be made directly to the income statement, but would be an equity transaction charged to the statement of changes in equity instead. It is submitted that such conclusion is in line with the Standard Interpretation Committee No. 16 (SIC 16) – *Share capital: Reacquired Own Equity Instruments (Treasury Shares)* which requires that any gain or loss on the resale, issuance or cancellation of treasury shares must be presented in equity and not in the income statement (IFRIC, 1998:paras. 4-5). The reason given is that any change in equity recorded by the enterprise from reacquiring and cancelling its ESOs and replacing them with shares represents a *change in the status* of the employees from being option holders to becoming actual shareholders, rather than a gain or loss by the enterprise itself (IFRIC, 1998:paras. 8-9). Appendix A contains an illustrative example of the application of ED 2 to a fixed option plan.

#### 4.7.7. Exercise date accounting

No formal accounting statement or exposure draft issued by the FASB or the IASB has ever prescribed an exercise date accounting model for ESOs. However, such accounting treatment has been considered in the academic literature. Authors who favour exercise date accounting are of the opinion that outstanding ESOs are liabilities and in substance similar to cash-settled SARs (FASB, 1995:para. 132). Thus, by not accounting for the two types of transactions in the same manner, accounting differences arise between two economically equivalent instruments which is academically unsound. However, there are in essence two views as to how one effects exercise date accounting.

Balsam (1994:55) argued that ESOs should be treated identically to SARs under FIN 28. In other words, for the first period-end after grant date, a liability is raised for an amount equal to the intrinsic value of an ESO under the scheme multiplied by the number of ESOs outstanding multiplied by the portion of the vesting period already completed. The debit side of the entry is posted to a compensation expense account. At the end of each period up until vesting date, the total liability is adjusted to reflect changes in the end of period share price, number of options outstanding and the vesting period completed. Movements in the liability are charged to a compensation expense account. For every period-end after vesting date until the earlier of exercise date or the expiry of the option, the liability is adjusted to reflect changes in its intrinsic value and changes in the number of ESOs outstanding. (Balsam, 1994:55-59.)

Upon the exercise or expiry of the ESO, the ESO liability account would once again be marked-to-market to reflect the intrinsic value of the ESO at that date and such adjustment would be run through the income statement as additional compensation expense. The exercise price paid in by the employee would be debited to assets and the market price of the shares would be credited to share capital (and share premium). The difference between the two amounts would be closed off to the ESO liability account. Likewise, should the ESO expire unexercised, the intrinsic value of the ESO would be zero resulting in the liability being adjusted to zero. (Balsam, 1994:55-59; IASB, 2002a:para. BC92.) Balsam (1994:56) maintained that using this method of accounting, the transaction amount is ultimately trued up to equal the gain made by the option holder on exercise or lapsing of the option. This is also equal to the opportunity cost to the firm of issuing the ESOs at the exercise price as opposed to the market price. He also noted how the use of the intrinsic value method relieves the measurement uncertainties produced by option-pricing models (Balsam, 1994:56). It is contended that contrary to Balsam's justification of the intrinsic value method, use of intrinsic value understates the cost of ESOs and does not provide an adequate measure of the opportunity cost of ESOs. Appendix A contains an illustrative example of the application of the accounting principles suggested by Balsam (1994) to a fixed option plan.

Kirschenheiter, Mathur and Thomas (2003:7) favoured the proprietary view mentioned in paragraph 4.6.3 in that outstanding ESOs are to be classified as

liabilities. Essentially, these authors adopted an approach identical to the G4+1 Paper except that they extended the measurement date from vesting date to exercise date. Thus, similar entries to Balsam (1994) would be made, but with a number of important exceptions. Firstly, instead of the ESO's value being determined using its intrinsic value, its value would be determined at the end of each period using an option-pricing model. Secondly, Balsam (1994) proposed using only the actual number of options outstanding at the end of each reporting period to accrue the compensation expense and did not permit the use of an estimated forfeiture rate to determine the expected options to vest. Although not specifically mentioned in their paper, it would seem plausible to conclude that Kirschenheiter, Mathur and Thomas (2003) would allow either of the two methods seeing as though they do not specifically refer to any specific methodology in their paper. However, it is argued that no such alternative should be permitted and only the use of the actual number of ESOs outstanding should be used to accrue the ESO cost. According to the method proposed by Kirschenheiter, Mathur, and Thomas (2003:7), the ESO is marked-to-market each period until exercise date and adjusted for forfeitures and any other cancellations of the ESOs even after the vesting date. To these authors, the logic for making adjustments to the ESOs' value after the vesting date is that because ESOs are liabilities, changes in the options' value after the vesting date are in substance similar to unpaid interest accruing on outstanding government bonds (Kirschenheiter, Mathur & Thomas, 2003:7).

It is submitted that the accounting for the services received and paid for with ESOs, must reflect both the probability that the employee will not be compensated at all for services performed to the company (contingent nature of the ESO obligation) and the fact that the employee is rendering services which fluctuate according to movements in the value of the share price and therefore the ESOs. Use of exercise date accounting coupled with the proprietary approach best achieves this. The reason is that at the end of each period until vesting date the total fair value of the ESOs is determined by multiplying the fair value per ESO at the relevant period-end by the number of options outstanding at that date. Such value is to be multiplied by the completed service period which equals the cumulative compensation expense to date. This value is an interim measure of the portion of the contingent obligation that the entity has to its employee for his services. This recognises the fact that the

employees only have a contingent right to a portion of the ESOs and such portion increases in size as the vesting period draws to a close. This amount less the previous cumulative compensation expense is the compensation expense for the relevant accounting period. Applying this method not only results in the ESO cost being accrued over the service period, but changes in the fair value per ESO are also incorporated into the compensation cost reflecting the symmetry between the level of employee services and the cost thereof which is reflected in the movement of the ESOs' fair value. Changes in the number of ESOs outstanding reflects the fact that the entity only has an obligation to pay for employee services with ESOs which are or will be vested and it has no obligation to pay for services received in respect of which the ESOs have been or will be forfeited. This results in the compensation expense recognised equalling the total opportunity cost of the ESOs to the company.

However, the value of the ESOs at vesting date is merely an accounting estimate of the amount compensated to the employee. Such estimate may change in value depending on the company's share price performance. In other words, until the ESOs are exercised, there still exists a probability that the options may be underwater meaning that the previous compensation expense may change in value. To reflect such change in accounting estimate, the ESOs must be revalued at the end of each period even after vesting date. Alternatively, one can view the ESO liability for payment for the employee's services as being crystallised or finalised at vesting date. Thereafter, changes in the fair value of the ESO liability are in substance interest payable to the employee on the unpaid ESO liability account. Such "interest" accrues until the earlier of exercise date or expiry date of the ESOs in the form of fair value adjustments to the ESO liability.

By marking-to-market the ESO liability until the earlier of exercise date or expiry date, the company ultimately trues up the amount ultimately paid for the employee's services to the gain (if any) made by the employee upon exercise of his ESOs. Furthermore, showing the movements in the ESOs value by remeasuring them after vesting date recognises the exposure that the company and its existing shareholders have in the opportunity cost of forgoing the potential proceeds from issuing the underlying shares at full value. Finally, exercise date accounting also reconciles the accounting for ESOs and cash-settled SARs which are economically equivalent transactions, since they both will be treated as liabilities.

At the date the ESOs are exercised, Kirschenheiter, Mathur and Thomas (2003:7) propose that first the share options liability account is debited with an amount equal to its balance at exercise date and a credit is made to cash. This entry would be an entry shown on the cash flow statement as a cash outflow from operations. The shares issued to the employee at exercise date are recognised at their fair value by debiting cash and a corresponding credit is made to share capital (and share premium). This cash inflow would be treated as a cash inflow from financing activities on the cash flow statement and the exercise proceeds paid by the employee are effectively ignored. (Kirschenheiter, Mathur & Thomas, 2003:7.) It is submitted that such entry is confusing and would mislead users of financial statements. Instead, it is proposed that the entry to be made at exercise date would be to debit the bank account with the exercise proceeds, the share capital account is to be credited with the fair value of the shares at exercise date, the ESO account is to be debited with its balance at the exercise date and the balancing figure is charged to earnings as compensation expense.

Kirschenheiter, Mathur and Thomas (2003:21) found that treating ESOs as liabilities generates accounting numbers that satisfy their defined “conditions of proper accounting”, which is not the case when using the FASB’s proposals in SFAS 123. Appendix A contains an illustrative example of the application of the accounting principles suggested by Kirschenheiter, Mathur and Thomas (2003) to a fixed option plan. A similar model was also proposed by Hull and White (2003:5) in which they argued that outstanding ESOs should be classified as another category on the balance sheet, namely, contingent claims, and that they should be revalued from grant date and at each subsequent reporting date.

However, Kirschenheiter, Mathur and Thomas (2003:21) and Balsam (1994:59) found that one of the main disadvantages associated with marking-to-market an ESO is that it introduces fluctuations in reported earnings as and when the ESO’s value changes. It is contended that movements in the share price must be reflected in earnings as this is the substance of the service contract – the employee is rewarded if the share price goes up and the company thereby loses as its opportunity cost rises. Likewise, the employee loses if the share price falls but the company “gains” because the opportunity cost to the company of the employee’s ESOs falls. Furthermore, the



amount and timing of the employee's services are a function of the level and movements of the company's share price. Consequently, the fluctuation in earnings engendered by ESOs is part and parcel of compensating an employee with ESOs as this is the nature of the cost of the instrument to the company.

#### **4.8. SUMMARY AND CONCLUSIONS**

This chapter commenced with an examination of the various determinants of the value of a traded share option. Such variables include the option's intrinsic value. (i.e. the positive difference between the current share price and the strike price), the time to expiry date, the volatility of the underlying share price, the risk-free interest rate and the dividends expected during the life of the option. Thereafter, the most famous equilibrium option-pricing models, namely the Black-Scholes and the Cox-Ross-Rubenstein binomial option-pricing models were briefly examined.

The possible measurement methods for measuring an ESO were looked into. The historical cost method was rejected because it assumes that ESOs are assets of the issuing company. The intrinsic value method was also found to be academically unsound due to the fact that it undervalues ESOs by not taking into account the time value of the option. The minimum value method was also addressed but was considered not plausible because it ignores volatility, which also causes the undervaluation of ESOs. Finally, the fair value method was considered and it is concluded that such valuation method is the preferred approach due to its acceptability in other areas of accounting and the fact that it most accurately reflects the exchange transaction between the company and its employee for his services rendered. Furthermore, such value best reflects the opportunity cost of the company granting ESOs to its employees. It is submitted that allowing entities to use the minimum value method in certain instances should be removed from future accounting standards as this opens up loopholes and promotes companies to structure their operations so as to avoid fair value measurement.

Thereafter, the differences between ESOs and normal traded options were enumerated. Essentially, the major differences lie in the fact that the terms of ESOs are stochastic, vesting conditions cause the probability of forfeiture of ESOs and the inability to transfer or hedge ESOs results in early exercise of vested ESOs. Despite such differences, both the FASB and the IASB correctly concluded that option-pricing

models could still be used to determine the fair value of ESOs. To address such differences, option-pricing models like the Black-Scholes model and the binomial option-pricing model would need to be adapted for the unique features of ESOs. Although option-pricing models may tend to overvalue ESOs, Hall and Murphy (2002) made an important distinction between the cost to the company (the option writer) and the value to the executive (the option holder). It is concluded that the nature of an ESO is that the entity compensates the employee with an instrument which is a potential obligation to issue its shares at the exercise price and to thereby forgo the potential proceeds from issuing its shares at full value. The objective when valuing ESOs for accounting purposes is to therefore determine the equilibrium price a willing buyer and a willing seller would agree upon for such instruments in an arm's length transaction. Such equilibrium price is equal to the opportunity cost or the alternative amount *the company* (the option writer) would have received had it issued the ESOs on the market (i.e. the option premium). Thus option-pricing models must determine *this* value when valuing ESOs for determining the compensation expense associated with ESOs. The value of the ESOs to the *executive* (the option holder) is irrelevant since he may have a different risk profile to the company. Therefore, caution must be exercised before levelling criticism on the values produced by option-pricing models when valuing ESOs for accounting purposes.

The chapter explored the different option-pricing models developed in the academic literature for valuing ESOs. In essence, the adjustments required would be estimating a forfeiture rate to take into account the probability of forfeiture and using the ESO's estimated life as opposed to its contracted life in order to take into account the effects of non-transferability and the stochastic lives of ESOs. Two alternatives to using option-pricing models were also considered. The use of an investment banker who would value such ESOs was criticised due to it relying on too many assumptions. Alternatively, the employer may offer the employee an alternative of being compensated in ESOs or cash. The approach of using such cash alternative to value ESOs was dismissed on the grounds that the cash alternative and the option alternative are incomparable. The use of an investment banker was dismissed on the grounds of the subjectivity induced by this method and the fact that it may not always be practical to use such method. Consequently, because there exists no active

market to derive the fair value of ESOs, it is concluded that option-pricing models provide the best approximation for the fair value of ESOs.

However, it must be noted that such models must only incorporate factors affecting the arm's length price between the company (option writer) and its employee (option holder). Factors that do not affect such price must be ignored. It is felt that the adjustments for the effects of forfeiture of the ESO must be made since this affects both the value of the ESO to the executive and the company. However, the effects of non-transferability and non-hedgeability affect only the value of the ESO to the employee and not the company and should not be taken into account when using option-pricing models. Finally, the use of estimated contractual life in estimating an ESO's life is preferable to the contractual life since use of the contractual life will over-estimate the value of ESOs that expire unexercised. The various accounting standards examined in this chapter did not specifically favour any one option-pricing model but instead favoured adaptation of existing option-pricing models to the unique features of ESOs. Because of the complex mathematics surrounding option-pricing, it would not be appropriate to conclude which option-pricing model would be the preferred one when valuing ESOs. However, it is felt that the task of both the FASB and the IASB should be to prescribe a specific option-pricing model to value an ESO because leaving the choice open of which model to use, will cause companies to use the model which results in the lowest value of their ESOs and will prevent comparability across different companies.

The various measurement dates for accounting for ESOs were considered. In essence, the term "measurement date" refers to the date at which the ESO must be valued which corresponds to the issue date of the ESO. Vesting date accounting assumes that the ESOs are absolute rights to subscribe for shares, which are only obtained once the vesting conditions are fulfilled. Consequently, until vesting date the ESO is a contingent right which is crystallised into an absolute right at vesting date, which is the issue date for the ESO. Service date accounting assumes that ESOs are issued rateably over the service period. In contrast, grant date accounting presumes that the ESOs are issued at grant date. Exercise date accounting presumes that the ESOs are liabilities which are converted to equity instruments only at exercise date. It is concluded that exercise date is the most appropriate measurement date since it best reflects the economics of the ESO transaction by remeasuring the fair value of

the ESO instrument until the exercise date. The reasons for this are mentioned below.

The classification of whether ESOs are equity or liabilities or a separate class of claims on the firms' assets was studied. All the accounting standards considered in this dissertation favoured equity classification of ESOs on the grounds that because the ESO is an obligation which is to be settled in shares which are not "assets" of the enterprise, it does not meet the definition of a "liability" and is therefore equity. Proponents of liability classification argue that the economics of an ESO and a SAR are identical and should therefore be treated the same and therefore ESOs should be classified as liabilities to achieve consistency between the two instruments. It is concluded that the liability classification is the correct method and the FASB and the IASB should base their classification of ESOs by means of the economic substance of the ESOs rather than the existing definitions of elements of financial statements in the accounting frameworks. Furthermore, liability proponents argue that classification of ESOs as liabilities allows the remeasurement of ESOs each period which causes the opportunity cost of ESOs to be reflected in the financial statements. It is felt that the company's obligation to pay the employee for his services is a liability, which the company has chosen to settle with ESOs that may or may not be exercised. Such liability continues until the earlier of the date the ESO is exercised or the eventual expiry date. Furthermore, it is submitted that the ESO transaction can be thought of as the employee eventually subscribing for the company's shares for cash at the market price at exercise date and the entity repaying him the intrinsic value of his ESOs at this date to settle the obligations inherent in the employee's ESOs. Such payment is in cash (an "asset") and would therefore make the ESO instrument satisfy the definition of a "liability" per the IASB and FASB accounting frameworks.

The chapter went on to review the various accounting models that were developed for the accounting for ESOs over the service period. Table 2 below provides a summary of the various measurement methods, measurement dates and accounting requirements of the different accounting standards considered in this chapter.

**TABLE 2: SUMMARY OF ACCOUNTING FOR EMPLOYEE SHARE OPTIONS UNDER VARIOUS ACCOUNTING MODELS**

Feature	APB 25	SFAS 123	ED E-124	G4+1 Paper	ED 2	Balsam (1994)	Kirschenheite <i>et al.</i> (2003)
Classification of ESOs on the balance sheet	Equity	Equity	Equity	Equity	Equity	Liabilities	Liabilities
Measurement date	<i>Fixed plans</i> Grant date <i>Variable plans</i> Date when no of shares & exercise price are known.	Hybrid method of grant date and vesting date.	Grant date	Vesting date	Grant date	Exercise date	Exercise date
Valuation method	Intrinsic value	Option-pricing model for public companies yet private companies can use minimum value method.	Option-pricing model for public companies yet private companies can use minimum value method.	Option-pricing model yet if cannot value the ESOs reliably, can value them at exercise date.	Option-pricing model	Intrinsic value	Option-pricing model

TABLE 2: SUMMARY OF ACCOUNTING FOR EMPLOYEE SHARE OPTIONS UNDER VARIOUS ACCOUNTING MODELS

Feature	APB 25	SFAS 123	ED E-124	G4+1 Paper	ED 2	Balsam (1994)	Kirschenheite <i>et al.</i> (2003)
Basic accounting treatment	<p><i>Fixed plans</i> Accrue intrinsic value at grant date over service period.</p> <p><i>Variable plans</i> Until the "measurement date", the ESO is marked-to-market and allocated over the service period. Once no of shares is known and exercise price is determined, the intrinsic value at that date is to be allocated over the remaining period of service.</p>	Compensation cost is accrued based on grant date value of ESOs and adjusted for subsequent forfeitures occurring before the vesting date.	At grant date, a prepaid compensation asset is raised and amortised over the service period based on the grant date value of the ESOs. The ESO cost is subsequently adjusted for changes in both forfeitures before vesting date and changes in the expected lives of the ESOs.	Until vesting date, the fair value per ESO is recomputed, the number of ESOs outstanding is adjusted for any changes in forfeitures and the compensation expense accrued is revised accordingly. At vesting date, a similar adjustment occurs. Thereafter, no adjustment to compensation cost occurs after the vesting date.	A value per unit of service is to be estimated at grant date based on the estimated services to be received. As and when services are received from the employee, the service units received are multiplied by the value per unit of service. It is this figure which is to be accrued as compensation expense for the relevant period.	Until exercise date, the <b>intrinsic value</b> per ESO is to be recomputed, adjusted for changes in forfeitures and the compensation expense accrued is revised accordingly.	Until exercise date, the <b>fair value</b> per ESO is to be recomputed, adjusted for changes in forfeitures and the compensation expense accrued is revised accordingly.

TABLE 2: SUMMARY OF ACCOUNTING FOR EMPLOYEE SHARE OPTIONS UNDER VARIOUS ACCOUNTING MODELS

Feature	APB 25	SFAS 123	ED E-124	G4+1 Paper	ED 2	Balsam (1994)	Kirschenheit et al. (2003)
Adjustments to number of options estimated at grant date as a result of a change in forfeiture rate prior to vesting date.	Yes	Yes	Yes	Yes	No	Yes	Yes
Adjustments for changes in any of the option-pricing variables after grant date (other than the forfeiture rate).	<i>Fixed plans</i> No <i>Variable plans</i> Only until the "measurement date", is intrinsic value is adjusted.	No	Yes, adjustment is made for differences between estimated lives of ESOs and actual lives.	Yes, fair value is recomputed at end of every period until vesting date.	No	Yes, intrinsic value is adjusted every period until exercise date.	Yes, the fair value is adjusted every period until exercise date.
Adjustments for the non-exercising of ESOs at expiry date	No	No	No	No	No	Yes	Yes

All the above accounting methods examined in Table 2 require that the ESOs paid to the employees must be recognised over the service period as compensation expense per the accrual concept. Both the APB 25 and the ED E124 models were found to be technically flawed and could not be applied as reasonable accounting models for ESOs. It was found that the essential debate between ED 2 and SFAS 123 and the G4+1 Paper lay in the fact that with both SFAS 123 and the G4+1 Paper, an interim measure is made for the value of the ESOs which are to be issued at vesting date. Such value is accrued as compensation expense over the service period and is adjusted for forfeitures until the vesting date. The G4+1 Paper also required the fair value per ESO to be subsequently adjusted for changes in its value until vesting date. Thus, under both accounting standards, the final compensation expense is only finalised at vesting date when the ESO instruments are issued. Non-vested ESOs that are forfeited result in no compensation expense since the entity has no obligation to pay for such services. However, ED 2 regards an ESO as being an executory contract entered into at grant date. As and when services are received, such services are compensated with ESO instruments. The entity determines the value of each unit of services to be received based on the total fair value of the ESO instruments at grant date and multiplies such value by the actual units of service received over the service period. Since the ESOs are equity instruments issued each time services are received, they are not subsequently adjusted for forfeitures or changes in the fair value per ESO neither before nor after the vesting date.

The method of SFAS 123 and ED 2 of not remeasuring the fair value per ESO after the grant date is inconsistent with the economic nature of ESOs since it fails to recognise the opportunity cost of the ESOs in the financial statements. However, although the G4+1 Paper does make this adjustment, it does not extend the measurement date beyond the vesting date. This does not recognise the full opportunity cost of the ESOs which is only finalised at the exercise date (if any).

Furthermore, it is concluded that the method proposed by ED 2 of using units of service to allocate the compensation received, is hypothetical and subject to judgement and error. Such proposal should rather be considered an alternative, rather than the prescribed method of allocating the ESO cost over the service period.

In addition, it is concluded that the ESO transaction can be looked at in two identical manners. Firstly, they can be thought of as instruments being paid for by the



employee with his services. Alternatively, they can be thought of as instruments used by the company to pay for the employee's services. The IASB seems to subscribe to the former view whereas the FASB seems to subscribe to the latter view. It is submitted that the above distinction is unnecessary.

It is concluded that exercise date accounting is the most appropriate accounting method. As mentioned in Chapter 3 (para. 3.7), the economics of an ESO transaction is that the company is paying the employee with an instrument which is a *potential* obligation to the company to issue its shares at a discount to their market price. The word "potential" is important because the company's obligation is contingent upon fulfilment by the employee of the vesting conditions **and** the underlying share price rising above the exercise price. In addition, by the employee agreeing to be paid in ESOs, he has implicitly accepted the risk or probability that he may not be able to exercise his ESOs if the vesting conditions are not met (forfeiture probability) *and* the underlying share price does not rise above the exercise price (underwater probability). Thus, it is submitted that the employee's level of services are a function of the movements in the company's share price and therefore the value of the ESOs. If the fair value of the ESOs go down, so do their incentive effects, which causes the employee to reduce his level of services provided for the ESOs, and/or demand extra pay. On the other hand, if the fair value of the ESOs rise, so do their incentive effects which causes the employee to increase his level of services for the ESOs and increase company profitability.

The accounting for the services received and paid for with ESOs, must reflect both the probability that the employee will not be compensated at all for services performed to the company (contingent nature of the ESO obligation) *and* the fact that the employee is rendering services which fluctuate according to movements in the value of the share price and therefore the ESOs. This in turn will recognise the opportunity cost of the ESOs to the company. To achieve this, the proprietary approach must be followed and the outstanding ESOs must be classified as liabilities. Remeasurement of the fair value per ESO until vesting date reflects the symmetry between the amount of employee services and the cost thereof to the company. Changes in the number ESOs in issue after grant date due to forfeitures reflects the fact that such ESOs cost the company nothing and therefore no compensation cost is recognised for them. However, exercise date accounting extends the measurement

date until the exercise date. The reason for this is that the nature of the ESOs at vesting date is that they are liability instruments which are contingent on being in-the-money at exercise date. Consequently, their value at vesting date is merely an estimate of their total cost to the company (if any). Such estimate changes in value until the exercise date which is why exercise date accounting remeasures the instrument at the end of each period even after vesting date. The eventual result of this is that the total cost recognised for ESOs equals the employee's actual gain, if any, from the exercising of his ESOs. This is equal to the opportunity cost of the ESOs to the company.

Alternatively, one can view the ESO liability for payment for the employee's services as being finalised at vesting date. Thereafter, changes in the fair value of the ESO liability are in substance interest payable to the employee on the unpaid ESO liability account. Such "interest" accrues until the earlier of exercise date or expiry date of the ESOs in the form of fair value adjustments to the ESO liability. The splitting of the ESO transaction into a payment for the employee's services until vesting date and thereafter a payment of interest on the liability is consistent with IAS 16 – *Property, plant and equipment*. IAS 16 requires that where payment for an item of property, plant and equipment is deferred beyond normal credit terms, the substance of the transaction is that the entity is purchasing an asset as well as paying interest on the liability incurred therefor over a period of time. Consequently, at the date the risks and rewards of ownership of the asset pass to the purchaser, the cost of the asset as well as the resultant liability incurred to acquire the asset must be raised at an amount equal to the present value of the future cash payments for the asset. The difference between this present value and the total payments to be made, is recognised as interest expense over the period of credit with a contra entry to the liability account. (IASB, 1999:para. 16.)

Finally, it is concluded that exercise date accounting also reconciles the accounting for ESOs and cash-settled SARs which are economically equivalent transactions, since they both will be treated as liabilities. The argument that exercise date accounting results in fluctuations in earnings is unfounded because movements in the share price must be reflected in earnings as this is the substance of the service contract – the employee gains if the share price rises and the company thereby loses as its opportunity cost increases. Likewise, the employee loses if the share price falls

but the company “gains” because the opportunity cost to the company of his ESOs falls. Thus, use of exercise date accounting is consistent with the economics of the ESO transaction.

## CHAPTER 5

### FURTHER ACCOUNTING ASPECTS OF EMPLOYEE SHARE OPTIONS

#### 5.1. INTRODUCTION

This chapter explores the accounting treatment for the so-called “exotic features” inherent in certain employee share option (ESO) plans. Such features include ESOs with a cash-settlement alternative, reload features and the consequences of repricing and other modifications of ESO terms. The deferred tax consequences of ESOs is also explored and a disclosure model for ESOs is presented. The accounting methods examined in this chapter only focus on the various accounting standards issued by the FASB and the IASB. It must be noted that where mention is made that the transaction will be accounted for according to the requirements of the relevant accounting statement, reference is to be made to Chapter 4 for such accounting treatment.

#### 5.2. ESOs WITH A CASH-SETTLEMENT ALTERNATIVE

##### 5.2.1. Introduction

Under some ESO contracts, the employee can choose to receive cash instead of exercising his options. The situation described here differs from that described in Chapter 4 (para. 4.4.3). In Chapter 4 (para. 4.4.3), at the outset, the employee has the choice whether to be *compensated* with options or cash. In the case described in this chapter (cash-settlement alternative), the employee has already been compensated with options except the *settlement* of the options can either be in shares or cash.

There are many possible variations of arrangements under which a cash-settlement alternative may be paid. For example, the *employee* may have more than one opportunity to elect to receive the cash-settlement alternative, eg. the employee may be able to elect to receive cash on the vesting date, and/or elect to receive cash instead of exercising the options. On the other hand, the *entity* rather than the employee may have the choice over the form of settlement, i.e. whether to pay the cash alternative on vesting date or pay cash instead of issuing shares upon the

exercise of the options. The amount of the cash alternative may be fixed or variable and, if variable, may be determinable in a manner that is related, or unrelated, to the price of the entity's shares. (IASB, 2002a:para. BC238; IASC, 2000:para. 7.27.) This section explores the various accounting alternatives suggested by the FASB and the IASB to account for ESOs with a cash-settlement alternative. The accounting for ESOs with a cash-settlement alternative was not addressed by any of the exercise date accounting proponents. Presumably, the accounting for ESOs with a cash-settlement alternative would not be any different to a normal ESO since the entire ESO is classified as a liability whether or not there is a cash-settlement alternative.

### 5.2.2. SFAS 123 and ED E-124

Although ED E-124 contained very similar requirements to SFAS 123, SFAS 123 elaborates and provides better guidance than ED E-124 as to how to account for ESOs with a cash-settlement alternative. Therefore, only SFAS 123 is discussed further in this section.

SFAS 123 requires that the accounting for an ESO plan with a cash-settlement alternative reflect the substantive terms of the ESO plan. Such terms are those that are mutually understood by the employer and the employee who receives awards under the plan. Usually, they are contained in a written option plan, yet the employer's past practice may indicate different terms are intended. Therefore, SFAS 123 requires that the entity must decide based on the substance of the terms of the ESO plan, whether the settlement thereof converts the ESO into a liability or an equity instrument or an instrument with a combination of both elements. (FASB, 1995:paras. 39-40.) Like the G4+1 Paper and ED 2 discussed in paragraphs 5.23-5.24, SFAS 123 concludes that if the *employee* has the choice of settlement, the entity has an obligation to pay cash (an asset) on demand by the employee, hence the award is to be classified as a liability. However, if the choice is the *employer's*, it can avoid paying cash to settle the award and instead issue shares (not an asset of the entity). Hence the instrument should be classified as equity *unless* the entity usually settles such awards in cash if asked to by its employees, in which case the instrument is a substantive liability. (FASB, 1995:para. 39.) It is submitted that the above distinction is very subjective and can be open to abuse in that companies will attempt to classify ESOs as equity so as to avoid remeasurement of the instrument.

Instead, all types of ESOs should be classified as liabilities as this obviates the problem of splitting between equity and liability components of an instrument and the complexities induced thereby as described below.

*Classification as equity (employer has the choice of settlement)*

Should the entity decide that the ESO with a cash-settlement alternative is to be classified as equity, it is accounted for like a normal ESO according to SFAS 123 until settlement thereof (see Chapter 4 (para. 4.7.3)). If the entity does not repurchase the ESOs with cash or other assets (or incurs no liabilities), but the employee exercise his options for shares at the exercise price, the same entries as described in Chapter 4 (para. 4.7.3) occur. However, the accounting consequences if the ESOs are repurchased with cash or other assets (or liabilities are incurred), differ depending on whether the entity repurchases the ESOs before, on or after the vesting date. If the repurchase occurs *after* vesting date, the amount of cash or other assets paid (or liabilities incurred) to repurchase the ESO is to be credited to assets or liabilities and the share options account in equity is debited with an amount equal to its balance at the date of repurchase. The balancing debit or credit is to be charged directly to accumulated profit in the statement of changes in equity. However, SFAS 123 states that if the amount paid to settle the ESOs exceeds the fair value of the ESOs estimated at the date of repurchase, such excess is to be recognised as additional compensation expense in the income statement and not in accumulated profit in the statement of changes in equity. (FASB, 1995:paras. 37-38 & 321.)

If the repurchase occurs *on or before* vesting date, two journal entries are required. SFAS 123 contends that the settlement of non-vested ESOs effectively vests the awards and chrysalises the ESO obligation which means the outstanding ESOs become issued. Therefore, the company is to raise additional compensation cost in respect of the repurchased ESOs by debiting compensation cost and crediting the share options account in equity for the unrecognised compensation cost (which is equal to the total compensation cost estimated at grant date for such repurchased ESOs less the compensation accrued to date in respect of such ESOs). The second journal entry relates to the repurchase of the ESO instrument. This journal entry is the same entry as that passed to repurchase vested ESOs as described above. (FASB, 1995:paras. 37-38 & 325.)

The above treatment of recognising additional compensation expense for the excess of the fair value of the ESO at settlement date and the payment made to settle it, is in line with the reasoning given by SFAS 123 for the repricing of ESOs as discussed in paragraph 5.4.2. In essence, the excess paid represents additional compensation paid to the employee, since this is the only reason why the entity would repurchase an instrument owned by the employee for more than its fair value. Therefore, instead of charging the full excess of the repurchase proceeds over the share options account in equity to accumulated profit, a portion must instead be charged to compensation expense in the income statement.

*Classification as a liability (employee has the choice of settlement)*

Should an ESO with a cash-settlement alternative be classified as a liability, it would be treated like a cash-settled SAR under SFAS 123 as described in Chapter 4 (para. 4.6.3) (FASB, 1995:para. 337). Upon settlement, the ESO liability can be settled in either cash or with shares if the ESOs are exercised. The accounting consequences at settlement date are not directly addressed in SFAS 123. It is submitted that any resultant differences between the carrying amount of the ESO liability and the settlement payment, would be charged as additional compensation expense. The reason is that any payment made in excess of the fair value of a liability is not an equity transaction and must therefore be an expense. Since it is paid to the employee, it is additional compensation expense.

*Tandem awards*

SFAS 123 also refers to the situation where the employee is granted an award with two separate components, in which the exercise of one component cancels the other (referred to as a *tandem award*). An example is where ESOs are granted together with a phantom share award (i.e. a right to a cash-payment based on movements in the entity's share price) whereby the employee can only exercise one of the awards upon settlement date. In such a scenario, at grant date, the entity is to split the instrument into a liability component (cash-settlement alternative), and an equity component (the option). However, the value of the overall award is not the sum of the two components, but recognises that the employee must sacrifice the right to the value of one alternative in taking up the other. (FASB, 1995:paras. 339-345.) The

split between the equity and liability components of a tandem award is illustrated in Appendix B.

After grant date, the entity accounts for the *liability component* of the tandem award like a cash-settled SAR which is to be remeasured to recognise changes in its intrinsic value each period until settlement date. This is consistent with the fact that liability instruments are subsequently remeasured at the end of each period until the liability is extinguished. For the *equity component*, after grant date the entity accounts for it like a normal ESO under SFAS 123 as described in Chapter 4 (para. 4.7.3). (FASB, 1995:paras. 337-338 & 346-347.)

The accounting consequences at settlement date are once again not directly addressed in SFAS 123. It is submitted, that the following entries would be made:

1. If the award is settled in shares (i.e. the employee exercises his ESOs), assets are debited with the exercise proceeds, share capital (and share premium) account(s) is credited with the market price of the shares issued and the liability and share options accounts are debited with an amount equal to their respective balances at the exercise date. The balancing figure is to be charged directly to accumulated profit in the statement of changes in equity. However, should the intrinsic value of the award at exercise date exceed the sum of the balance of the liability component of the tandem award and the fair value of the equity component at exercise date, such excess is to be charged as additional compensation expense. The reason is that it represents an excess payment made to settle the liability component which is to be regarded as an expense.
2. If the award is settled in cash, assets are credited with the amount paid and both the liability and equity components are debited with an amount equal to their respective balances at the settlement date. Any balancing debit or credit would be charged to accumulated profit in the statement of changes in equity. However, any difference between the amount paid and the sum of fair value of the equity component of the tandem award at settlement date and the balance of the liability component at this date, is recognised as additional compensation expense in the income statement. If the award were not vested, additional compensation expense would be recognised in respect of the unrecognised compensation expense for the equity portion of the instrument.



It is asserted, that although this accounting treatment is consistent with the SFAS 123 accounting model, it is a complex process which may not necessarily provide useful information to the user due to its complexity. Instead, it is once again contended that the use of exercise date accounting obviates the need to split between equity and liability components and is a preferable approach.

### 5.2.3 G4+1 Paper

Like SFAS 123, the accounting consequences of ESOs with a cash-settlement alternative under the G4+1 Paper depend on whether or not the employee has the choice of settlement of the ESO.

#### *Employee has the choice of settlement*

The G4+1 Paper distinguished between whether the employee has made the election of settlement before, on or after the vesting date. Should the employee enjoy the right to receive the cash-settlement alternative *on or before* the vesting date and the expiry date of the ESO, the G4+1 Paper required that from grant date, the amount of the cash alternative is to be accrued as a liability and any excess of the fair value of the ESO over the amount of the cash alternative is to be accounted for as equity. (IASB, 2000:paras. 8.6, 7.33 & 7.35.) The logic of such treatment is that under the G4+1 Paper, the ESO instrument is issued only at vesting date. Therefore, accrual of the cash-settlement alternative as a liability and any excess as equity, reflects the probability that the employee will or will not choose the cash-settlement alternative. (IASB, 2000:para. 7.36.) Both the equity and liability components are marked-to-market each period until the earlier of vesting date or settlement date using the accounting model prescribed by the G4+1 Paper as described in Chapter 4 (para. 4.7.5).

Should the employee only enjoy the right of taking up the cash-settlement alternative between vesting date and the end of the exercise period, a special rule applies. Up until the vesting date, the company would have accounted for the ESO as equity using the fair value accounting model prescribed by the G4+1 Paper in Chapter 4 (para. 4.7.5). However, when the ESO has a cash-settlement alternative whereby election can only be made after vesting date, the company is deemed to have *issued*

a *compound financial instrument* (i.e. a financial instrument containing both liability

and equity components) at the vesting date. The reason is that the employer has a potential obligation to transfer cash to the employee (liability component) due to the employee having the right to have the ESOs settled in cash. However, the employee can also demand settlement of his ESOs in shares, hence the entity has a potential obligation to transfer its shares to settle the ESO (equity component). (IASB, 2000:paras. 7.37 & 7.39.)

Therefore the company is to split the compound instrument at vesting date into a liability and equity component. The fair value of the liability component (the cash-settlement alternative) is computed first and the valuation of the equity component (the ESO) takes into account the fact that the employee must forfeit his right to receive cash in order to receive the ESO. If the fair value of each settlement alternative is the same, then the fair value of the equity component (the option) of the compound instrument will be zero and the fair value of the compound instrument will be the same as the fair value of the liability component (the cash alternative). If the values differ, a split similar to a tandem award as described in paragraph 5.2.1 and Appendix B will occur. The liability component is subsequently marked-to-market each period until exercise date or until the employee elects to receive the cash alternative, with adjustments in its fair value being charged to the income statement (presumably as compensation expense). The equity component is not remeasured after vesting date, consistent with the fact that equity instruments are not remeasured after issue date. (IASB, 2000:paras. 7.40-7.43; IASB, 2002a:para. BC243.)

At the settlement date, the accounting consequences depend on the method of settlement:

1. If the employee exercises his ESOs, assets are debited with the exercise proceeds, both the liability and the share options account (if any) are debited with their respective balances at exercise date and a credit is made to share capital (and share premium) account(s) for the market value of the shares issued. The balancing debit or credit would presumably be charged directly to accumulated profit in the statement of changes in equity and not the income statement.
2. If the employee chooses the cash alternative, assets are credited with the settlement payment made, the liability is debited with an amount equal to its balance at the settlement date and any balancing debit or credit is treated as additional compensation expense to the income statement. Any amount

previously recognised within the share options account with respect to such ESOs, is to remain within equity as it represents the equity component of the compound instrument that has been forfeited by the employee.

(IASB, 2000:paras. 7.43-7.44.)

The reasons for such treatment upon the settlement of the ESO are not specifically enumerated. Should the employee exercise his ESOs, it is submitted that because the *employee* (not the employer) has the choice of settlement, any excess paid over the carrying amounts of the value of the equity and liability components represents an equity transaction since it represents a transfer from one component of equity claimants to another. However, where the employee chooses the cash-settlement alternative, the excess paid over the value of the liability represents an additional amount paid to settle a liability claimant which is an expense.

#### *Employer has the choice of settlement*

Should the employer have the choice of settlement of the ESO, the instrument would be classified as an equity instrument (IASB, 2000:paras. 7.33 & 8.5). The accounting consequences of such awards were not specifically addressed in the G4+1 Paper. It is submitted that until settlement of the ESO, it will be accounted for like a normal ESO under the G4+1 Paper as described in Chapter 4 (para. 4.7.5). Upon settlement, an approach similar to that given in ED 2 in paragraph 5.2.4 would presumably have been applied.

#### **5.2.4. ED 2**

Under ED 2 the accounting consequences of ESOs with a cash-settlement alternative also differ depending on whether the employee or the employer has the choice of settlement.

#### *Employee has the choice of settlement*

If the employee has the choice of settlement, the entity is deemed to have *issued* at grant date ESOs which are compound financial instruments that contain both liability and equity components for the same reasons as those mentioned under the G4+1 Paper in paragraph 5.2.3 above (IASB, 2002a:para. BC240). As with the G4+1 Paper, two situations emerge. The first case is where the employee can choose

settlement in shares (equity transaction) or he can elect to receive net cash of the excess of market price of the shares over the exercise price (liability). Using the logic under the G4+1 Paper as described in paragraph 5.2.3 above, at the grant date, the value of the liability component, determined using an option-pricing model, is the same as the value of the equity component. Therefore no value is attributed to the equity component. (IASB, 2002d:para. 38.) The second scenario refers to a situation where the employee is granted an award with two separate components, in which the exercise of one component cancels the other (i.e. a tandem award). The split between the liability and equity components of the tandem award is identical to that described by SFAS 123 and the G4+1 Paper in that the value of the equity component takes into account that in order to receive equity, the employee must forfeit his right to receive cash. (IASB, 2002d:paras. 37-38; IASB, 2002b:para. IG43.) Consequently, ED 2 requires that after grant date, the equity component is not remeasured but accounted for the same way as a normal ESO as described in Chapter 4 (para. 4.7.6), yet the liability component is remeasured to fair value each period until settlement date using an option-pricing model and not intrinsic value as proposed by SFAS 123 (IASB, 2002d: paras. 31-34 & 39-40). It is noteworthy to mention that KPMG International (2003:19) argue that the remeasurement of the liability component should not be accounted for as compensation expense, but rather as a gain or loss on the marking-to-market of the liability instrument itself. It is submitted that such comment is invalid since the remeasurement of an ESO is intricately intertwined with the level of employee services. Therefore, the fair value adjustments should be charged to compensation expense and not as finance costs.

At the date of settlement, the entity is to remeasure the liability to its fair value. The accounting entries upon settlement are the same as those described under the G4+1 Paper in paragraph 5.2.3 above. (IASB, 2002d:paras. 40-41.)

#### *Employer has the choice of settlement*

If the employer has the choice of settlement, the entity is to determine the substance of the settlement terms of the instrument. If the choice of settlement in equity instruments is not substantive, or if the entity has a past practice or a stated policy of settling such instruments in cash, it is deemed to have a liability obligation and must account for the ESO as a cash-settled SAR. However, if no such obligation exists, the

entity is to account for the ESO like a normal equity ESO. (IASB, 2002d:paras. 42-43.)

If one assumes that the ESO is classified as equity, upon settlement date, the following occurs:

1. If the entity elects to settle in cash, assets are credited with the settlement payment made, the share options account in equity is debited with an amount equal to its balance at the settlement date and any balancing debit or credit is to be charged directly to accumulated profit except as noted in point three below.
2. If the entity elects to settle by issuing equity instruments (i.e. the employee exercises his ESOs), assets are debited with the exercise proceeds, the share options account is debited with its balance at exercise date and a credit is made to share capital (and share premium) account(s) for the market value of the shares issued. The balancing debit or credit is to be charged directly to accumulated profit in the statement of changes in equity, except as noted in point three below.
3. If the entity elects the settlement alternative with the higher fair value, as at the settlement date, the entity must recognise an additional compensation expense for the excess value given, i.e. the difference between the cash paid and the fair value of the alternative settlement payment.

(IASB, 2002d:para. 44.)

The above accounting treatment is consistent with ED 2's approach for repricing and cancelling non-vested ESOs, which is discussed in paragraph 5.4.5. Like SFAS 123, it argues that if the entity (as opposed to the employee) is prepared to settle the ESO with a more valuable payment, it must believe that it will receive an equivalent amount of benefit from doing so in the form of employee services. Therefore a further compensation expense is recognised. (IASB, 2002a:paras. BC212.)

A repurchase of an ESO as described above, can occur either during or after the vesting period. ED 2 requires that if an entity cancels or settles in cash a non-vested ESO (for reasons other than forfeiture), it must still continue to accrue the services rendered by the employee during the remainder of the vesting period, as if the ESO had not been cancelled (IASB, 2002d:para. 29(a)). The reason given for such treatment was that under the so-called "service received" method adopted by ED 2,

the entity cannot recognise the unrecognised compensation expense like the method used by SFAS 123, because in ED 2 there is no “unrecognised compensation expense” and services contributed can only be recognised as and when they are received. Hence, the entity continues to accrue the “services received” over an artificial service period until vesting date. (IASB, 2002a:para. BC221.) It is concluded that such approach of continuing to accrue compensation costs for non-vested ESOs which are cancelled for any reason other than forfeiture, is incorrect. The reason is that it is ridiculous to assume that the entity is incurring a cost for ESOs that have been forfeited because in reality, the ESOs cost the company nothing. Rather, it is suggested that from the date of cancellation, the recognition of an expense for these ESOs should cease.

It is submitted that the approaches suggested by ED 2, SFAS 123 and the G4+1 Paper are consistent with their fundamental accounting approaches. However, because of inherent flaws in their accounting models, these accounting standards add unnecessary complexity caused by the splitting between the equity and liability components of the ESO instrument. It is argued that users prefer a consistent classification of financial instruments either as equity or a liability. To best achieve this, the proprietary approach should be used which requires any instrument that is not pure equity to be classified as a liability. This recognises the exposure existing shareholders have to fair value changes in any instrument that is not pure equity.

#### 5.2.5. APB 25

In July 2000, the FASB issued FASB Interpretation No. 44 (FIN 44), *Accounting for Certain Transactions Involving Stock Compensation – An Interpretation of APB Opinion No. 25*. FIN 44 provides guidance as to how companies should account for share repurchase features present in ESO awards when using APB 25. In essence, the requirements of FIN 44 specify when variable accounting under APB 25 (read with FIN 28) should apply for fixed awards that have a repurchase feature. The requirements of FIN 44 are highly technical and company specific and depend *inter alia* on whether the entity is a public or non-public entity and the length of time the repurchase feature is held. (FASB, 2000c:paras. 67-74.) Consequently, these requirements are not be further elaborated upon in this chapter. FIN 44 also provides special accounting rules for cash bonuses linked to an ESO. It states that variable

accounting under APB 25 (read with FIN 28) is required for an option that contains a cash bonus feature that is *not* fixed and is contingent upon the exercise of the ESO. However, an otherwise fixed option plan under APB 25 that contains a fixed cash bonus and is only contingent upon the *exercise* of the ESO, is to be accounted for as a combined fixed award with the cash bonus reducing the stated exercise price of the ESO. (FASB, 2000c:para. 91.) Finally, a cash bonus, whether fixed or variable, which is contingent upon *vesting* of the ESO, is accounted for separately from the share option component (FASB, 2000c:para. 92). It is contended that the FASB's use of special accounting rules to prevent companies from entering into a certain transaction is not ideal. Instead, consistent accounting rules should be required for all comparable accounting transactions.

### 5.3. ACCOUNTING FOR THE RELOAD FEATURE OF AN ESO

#### 5.3.1. Introduction

More recently, many ESO plans now contain a feature known as a *reload feature* or a *top-up feature*. This is a feature whereby if the employee exercises his ESOs and pays the exercise price with previously owned company shares (known as *mature shares*), such employee will, in addition to receiving one share for each option exercised, also receive one new option for each share tendered. The new option (which is referred to as the *reload option* or *restoration option*) will have an exercise price equal to the market price of the shares at the date the reload feature is triggered and its term is equal to the remainder of the term of the original options. (Saly, Jagannathan & Huddart, 1999:219-221; Web-Surveys.Net, [S.a.]; FASB, 1995:para. 182.) For example, if an employee owns 100 ESOs with an exercise price of R100 and the share price at time of exercise is R125, 80 shares with a total market value of R10 000 (= R125 x 80) are required to pay the exercise price of R10 000 (= R100 per option x 100 options). The exercise will result in a net increase in the company's share capital of 20 (= 100 - 80) shares of a market value of R2 500 (= R125 per share x 20 shares). From the employee's perspective, he will not only profit from exercising his options, but will also receive 80 new reload options (one for each share tendered), each having an exercise price of R125 and its term is equal to the remainder of the term of the original options.

Frederick W. Cook & Co., Inc. (1998) found that the vast majority of reload options have a vesting term of one year or less. Reload options may have multiple reloads and the reload terms may differ from company to company. In fact, reload features have increased in popularity, so much so, that in 1997, 17% of all share option plans in the United States included a reload feature – up from 14% in 1996. (Dybvig & Loewenstein, 2003:146.) A reload feature in an option makes the option more valuable than a comparable conventional option without such feature. The reason is that the holder of the option with a reload feature not only benefits from exercising his original option (also known as the *first-generation option*) at the exercise price, but also now holds a further option (also known as the *second-generation option*) whereby he can benefit from future exercise thereof. (Saly, Jagannathan & Huddart, 1999:221; FASB, 1995:para. 185; Dybvig & Loewenstein, 2003:146.) The following section deals with the accounting treatment for the reload feature of an ESO suggested by the various accounting statements issued by the FASB and the IASB.

### 5.3.2. SFAS 123 and ED E-124

SFAS 123 does not require the reload feature to be valued at grant date. Rather, the original option is treated as one issue of an equity instrument and the reload option is treated as a separate new instrument, which is issued at the exercise date of the original option. (FASB, 1995:para. 34.) Although the FASB concluded that ideally, the reload feature should be incorporated into the fair value of the original ESO at grant date, because no reasonable method existed at the time of the issuance of SFAS 123 to estimate the value added by a reload feature, the reload option and the original option were to be treated as separate instruments (FASB, 1995:paras. 183 & 186). Similarly, ED E-124 required that the reload option be accounted for separately from the original grant (FASB, 1993:paras. 23 & 137). The accounting consequences will be identical to the issue of two options at different dates. Appendix C contains an illustrative example of the accounting consequences of incorporating the reload feature and not incorporating the reload feature in an ESO plan using SFAS 123.

### 5.3.3. G4+1 Paper

The G4+1 Paper also ideally would have required the entity to take into account the reload feature of ESOs at vesting date. However, it stated that if this is not feasible,



the alternative would be to treat the original option and the reload option separately. Therefore, at the time the reload option is issued, this would be treated as a cancellation of the original option and the issue of a new option in its place. (IASB, 2000:para. 7.26.)

#### 5.3.4. ED 2

However, ED 2 states that should an ESO have a reload feature, such feature must be taken into account, where practicable, when the entity measures the fair value of the original ESO at grant date. ED 2 therefore requires that first generation and second generation options be treated as one instrument and not as two separate instruments. (IASB, 2002d:para. 25.) The net effect of valuing the reload feature will be that any surplus charged to accumulated profit upon the exercise of the first generation option will be smaller than would have ensued should the reload feature be treated as a separate option grant. ED 2 notes that academic research supports the fact that the reload feature of an ESO can be determined at grant date (IASB, 2002a:para. BC179). In fact, Saly, Jagannathan and Huddart (1999:219 & 229) demonstrated how a binomial option-pricing model can be used to value ESOs with a reload feature at grant date. Similarly, Hemmer, Matsunaga and Shevlin (1998:251) derived a binomial valuation model for an unrestricted reload option and Dybvig and Loewenstein (2003:147) developed an option-pricing model which values the reload option with more general stochastic processes. However, should there exist significant uncertainties such as the nature and timing of expected grants of reload options which make it impossible to value the reload feature, ED 2 allows the reload feature to be treated as a separate grant like SFAS 123 and the G4+1 Paper (IASB, 2002d:para. 25; IASB, 2002a:para. BC179).

It is submitted that the reload feature should not be incorporated into the fair value of an ESO. Instead, the reload feature and the original option grant should be treated as separate grants. The reasons are that the academic research on the valuation of reload features is small and is not conclusive enough to support the valuation thereof in financial statements. To avoid manipulation and measurement uncertainties inherent in incorporating such value into the original ESOs' value, the reload feature should be accounted for separately from the original grant of ESOs.

### 5.3.5. APB 25

Finally, FIN 44 requires that should the entity account for its ESOs under APB 25 and the grantor modifies a fixed share option award to add a reload feature, variable accounting is required for the modified award from the date of modification until the date the award is exercised (FASB, 2000:paras. 57-58). Likewise, variable accounting is also required for the reload option itself, if it too is subject to a reload feature (FASB, 2000:paras. 57-58; Nadel, Haines & Kopp, 2003:75). This method is obviously impractical and inaccurate due to its use of intrinsic value as the measurement model.

## 5.4. ACCOUNTING FOR THE MODIFICATION TO THE TERMS AND CONDITIONS OF AN ESO

### 5.4.1. Introduction

As mentioned in Chapter 2 (para. 2.12.2), the act of repricing ESOs (resetting the exercise price) has elicited immense media attention over the past two decades (Chance, Kumar & Todd, 2000:130-131). In fact, Saly (1994:325-326) noted how the shareholders of Rockwell International in the US actually sued the company for repricing its ESOs. Crystal and Foulkes (1988:83) reported how many US executives repriced their share options following the 1987 share market crash. These authors argued that by repricing an ESO, the company is in fact rewarding the executive for poor performance in the share price (Crystal & Foulkes, 1988:84). This was further supported by a study conducted by Gilson and Vestuypens (1993:430) who found that almost 90% of sampled option repricings occurred when firms were extremely unprofitable or insolvent. Similarly, Brenner, Sundaram and Yermack (2000:127) found that resetting option terms was related to negative corporate performance. However, Chance, Kumar and Todd (2000:153) found that repricing was more common amongst smaller firms and was determined by the number of insider directors the company had on its board as well as its free cash flow.

Although executives have argued that repricing is part of holding onto key executives, Reingold (1999:56) noted how repricing had become a stigma to many companies and that the Securities Exchange Commission (SEC) wanted to require companies to

obtain shareholder approval before repricing could be effected. Likewise, Carter & Lynch (2003:52-53) found that although many companies flocked to reprice their ESOs before the FASB's cut-off date to require expensing of repriced ESOs when FIN 44 was introduced, some did not respond to the announcement in the light of the reputation costs associated with frequent repricing. On the other hand, Acharya, John and Sundaram (2000:66-67) found that there is a delicate balance or trade-off between incentivising the manager to increase the share price and reincentivising him by repricing ESOs that are underwater. In other words, if the manager anticipates a repricing, the incentives of ESOs will be weaker. However, should repricing be totally prohibited, this may cause demotivational consequences to the manager that may affect the company as well. Therefore a balance must be struck between the negative effect of repricing on initial incentives and the positive effect repricing has to remotivate managers. They concluded that, although repricing an ESO can have negative effects, some repricing is almost always optimal due to the trade-off described above. (Acharya, John & Sundaram, 2000:66-67.) In a similar vein, Saly (1994:326) demonstrated that repricing is optimal after a share market downturn.

From the above academic literature, it is evident that the optimality of repricing and/or resetting other ESO terms is an unresolved topic amongst economists and finance scholars. From the above literature it can be observed that repricing of ESOs may be optimal in certain situations and a trade-off needs to be established between allowing indiscriminate repricing and repricing to reincentivise management. Perhaps it would also be optimal for repricing to occur both in a bull market where exercise prices should be raised and in a bear market where exercise prices should be lowered. Nevertheless, the recognition consequences of expensing of ESOs would force companies to reprice their ESOs only if this is optimal to their earnings and this would help eliminate abuses engendered by repricing ESOs from the economic system. The next sections discuss the various accounting models proposed to account for repricing including any other changes to an option's terms or conditions. (For convenience, the term "repricing" is used in the following discussion, but it includes all other modifications in the option's terms and conditions.)

### 5.4.2. SFAS 123

SFAS 123 concludes that the effects of a modification of terms of an ESO are in substance identical to the effects of an exchange of the existing equity instrument for a new instrument. For example, should a company wish to reprice its ESOs, this could be thought of as either decreasing the exercise price of the existing ESO or as the repurchase (and subsequent cancellation) of the existing option in exchange for a new option with a lower exercise price. The economics of looking at the transaction either way are identical. (FASB, 1995:para. 187.) Therefore, SFAS 123 requires that the incremental value as a result of the repricing be treated as a *new option grant* in addition to the existing option grant. The value of the new options (also called the *incremental value*) is equal to the difference between the fair value of the new options at repricing date and the fair value of the old options immediately before their terms were modified at repricing date, determined based on the shorter of their remaining expected lives and the expected lives of the new options. (FASB, 1995:para. 35.)

If the options are vested at the date of repricing, the new options' value is to be charged to compensation expense immediately and credited to a share options account in equity at the date of modification. (FASB, 1995:paras. 35 & 319-320.) If the options are non-vested at the date of repricing, the company must accrue the compensation attributable to the new grant in addition to the original option grant. Therefore, the company adds to the value of the new options, the remaining unrecognised compensation for the original options at the date of modification, and recognises the total amount over the remaining service period (or if not known, the vesting period) by debiting compensation expense and crediting a share options account in equity as and when the services are received. (FASB, 1995:paras. 35 & 322-324.)

SFAS 123 supports the above treatment of repricing by saying that it is consistent with the view that the additional amount paid to the employee over and above the fair value of his existing ESOs at the date of repricing, represents additional compensation to be paid to the employee, otherwise the directors would not be acting in the best interests of the company (FASB, 1995:para. 188). In addition, the G4+1 Paper justified such treatment as it contended that the reason the entity repriced the ESO was that it implicitly believed that repricing will provide an incentive to the

employees, resulting in the entity receiving additional or enhanced employee services. Therefore because repricing represents a payment to the employee for additional services, it is charged to the income statement over the remaining service period and is not a capital transaction between the owners of equity instruments. (IASB, 2000:para. 7.23.) It is submitted that the above logic is academically sound and accords with the economic substance of the repricing of ESOs.

#### 5.4.3. ED E-124

ED E-124 followed a similar line of reasoning to that of SFAS 123 in that it reasoned that a modification to the terms of ESOs is identical to exchanging the existing ESO instruments for new ESO instruments of equal or greater value (FASB, 1993:para. 139). The difference between the fair value of the new ESO grant and the fair value of the original ESOs determined at the date of repricing, was to be recognised as additional compensation cost in a manner similar to SFAS 123, depending on whether the ESOs were vested or not (FASB, 1993:para. 231).

However, ED E-124 required a further entry to be made. The statement noted that an employee who exchanges his existing ESOs for ESOs of equal or greater value, in effect has received the remaining time value of his original ESOs. By repurchasing the ESOs for their fair value, the entity has in effect made the original ESOs transferable. Therefore, ED E-124 required the entity to readjust the prepaid compensation asset recognised at grant date calculated as the difference between the ESOs' value calculated at grant date in respect of the original ESOs and the ESOs' value that would have been calculated at grant date had the options' full term been used to estimate the ESOs' value. Thereafter, this adjustment to the prepaid compensation asset would need to be re-amortised to earnings so as to reflect the correct compensation cost in the financial statements. Such adjustment would be a retrospective change in an accounting estimate recognised at the date of change. (FASB, 1993:para. 24 & 232.) Such treatment would result in the truing up of the original ESOs' estimated lives to their actual lives (FASB, 1995:para. 189). ED E-124 is inconsistent in that only the estimated lives of the ESOs are trued up to their actual lives whereas other variables of option pricing (for example the volatility of the underlying share) are not adjusted from the grant date estimate of such values.

#### 5.4.4. G4+1 Paper

The G4+1 Paper followed a very similar approach to that of SFAS 123 for accounting for repricing. Because the G4+1 Paper made use of vesting date measurement, the final amount of the ESO transaction would only ultimately be determined at vesting date. Therefore, during the vesting period, any repricing or other changes in the ESOs' terms before vesting date would simply be accounted for as a normal change in the accounting estimate of the ESOs' value until vesting date, resulting in a gain or loss to the income statement. Therefore, the total compensation cost recognised by vesting date will equate the fair value of the options based on their modified terms. (IASB, 2000:paras. 7.19 & 8.10.)

However, if repricing occurred after vesting date, under the G4+1 Paper this would effectively mean that the entity has cancelled the existing ESOs and replaced them with the issue of new ESOs as payment for additional employee services. Therefore, because under the G4+1 Paper the ESOs are deemed to be issued at vesting date, the difference between the fair value of the original ESOs at repricing date and the fair value of the new ESOs at that date, would need to be recognised as additional compensation expense by debiting compensation expense and crediting the share options account in equity. (IASB, 2000:paras. 7.24-7.25 & 8.10.) The G4+1 Paper requirements are consistent with the nature of a repricing since the essence of a repricing is that the company is adjusting the value of the ESO and thereby incurring an extra cost because of this. Therefore, the value of the ESO must be readjusted each time there is a repricing and recognised as compensation expense.

#### 5.4.5. ED 2

ED 2 takes the view that a repricing term in an ESO contract makes it more valuable than an ESO contract without such term. Therefore, at grant date, the entity ideally should estimate the fair value of its ESOs so as to include the repricing feature. In fact, Johnson and Tian (2000:36) designed a valuation model to value an indexed ESO whose exercise price is indexed to a benchmark. However, as it is usually impractical to include the repricing feature in the valuation at grant date, ED 2 concedes that the incremental value induced by a repricing should rather be taken into account and when it occurs. Like SFAS 123, it requires that the incremental

value added by repricing (which is the difference between the fair value of the repriced options and the fair value of the original options immediately before their terms were modified, both estimated at the repricing date) to be accounted for as *new option grants* in addition to the original option grants. This is consistent with the view that if the entity is prepared to replace the existing payment with a more valuable payment, it must believe that it will receive an equivalent amount of benefit from doing so in the form of employee services. (IASB, 2002d:para. 27; IASB, 2002a:paras. BC212 & BC216.)

If the ESOs are non-vested, the entity first determines the total incremental value granted on repricing by multiplying the incremental value per option by the number of options outstanding at this date. The entity then determines the amount to attribute to each unit of service received in respect of the incremental value granted, by dividing the total incremental value granted by the number of units of service it expects to receive during the period from the date of repricing until the end of the vesting period of the repriced options, as estimated at the date of repricing. This amount is deemed to be the fair value of each unit of service to be received in respect of the incremental value granted. Consistent with the accounting method of ED 2 discussed in Chapter 4 (para. 4.7.6), the entity accounts for the services received in each period in respect of the “new grant” by multiplying the number of units of service rendered by the employees during that period by their deemed fair value per unit in respect of the new grant. A debit would be made to compensation expense and a credit would be made to a share options account in equity as the services are rendered. As the ESOs are not vested yet at the date of repricing, not all of the compensation would have been received in respect of the original grant. Consequently, the entity simultaneously continues to account for the services received in respect of the original option grant over the remaining vesting period. (IASB, 2002d:paras. 27-28.) Although not specifically addressed in ED 2, for vested ESOs, the entity would recognise the full amount of the incremental value granted on repricing in equity and charge the debit to compensation expense since it represents extra compensation paid to the employee for services already performed. Appendix D contains an illustrative example of repricing an ESO using the guidelines set by ED 2.

Furthermore, ED 2 adds that if new options are granted to the employee as replacement of the old options, the substance of the transaction is that the entity is

repricing the old options. Therefore, the accounting for such options is identical to the repricing of ESOs as described above. The incremental value granted is the difference between the fair value of the replacement options and the net fair value of the cancelled options, at the date the replacement options are granted. However, if the entity does not identify new options granted as replacement options for the cancelled options, the entity is to account for those new options as a new option grant. (IASB, 2002d:para. 29; IASB, 2002a:para. BC220.) These requirements of ED 2 are important since they reflect the essence of the transaction and prevent indiscriminate repricing by requiring such consequences to be recognised in the financial statements.

#### 5.4.6. APB 25

FIN 44 provides guidance as to the accounting consequences that ensue if the terms of a fixed share option under APB 25 are modified after the original measurement date. Regarding variable awards, the final measure of compensation is only finalised at the measurement date, regardless of whether the awards are modified or not. Therefore, APB 25 read with FIN 28 applies as normally for variable awards, adjusted to take into account any modifications. Hence guidance is only needed for an otherwise fixed option that is modified after measurement date. (Nadel, Haines & Kopp, 2003:54.) This guidance was issued by the FASB so as to deter companies from repricing their fixed ESOs (Grant & Ciccotello, 2002:39). Perhaps the FASB should have required companies to account for all ESOs consistently in the first place and would not have needed a special accounting requirement for companies to desist from repricing ESOs.

The accounting consequences of APB 25 depend on the nature of the modification to the fixed option award. Should the fixed option be modified so as to renew the option or extend its *exercise period*, it results in a new measurement date. Accordingly, compensation cost is to be computed as if the award is newly granted and is equal to the intrinsic value at the modification date in excess of the amount measured at the original measurement date. Variable accounting under FIN 28 is not applied. Rather, the intrinsic value determined is to be recognised over the remaining service period if the award is unvested, or immediately if the award is vested. (FASB, 2000:paras. 32-36.)



If the *exercise price* of a fixed ESO award is reduced, the award is to be accounted for under variable accounting per FIN 28 from the date of modification to the date that the award is exercised, forfeited or expires unexercised (FASB, 2000:para. 39). This requires that for the periods from modification until vesting, the ESO is be marked-to-market based on its intrinsic value and charged to the income statement on a straight-line basis over the vesting period. Subsequent to vesting, at the end of each period until the date that the award is exercised, forfeited or expires unexercised, the full movement in the ESO's intrinsic value is to be charged to the income statement. (Grant & Ciccotello, 2002:39-40; FASB, 2000:paras. 41-42.) FIN 44 also states that if the employee indirectly reduces the exercise price of an option award, variable accounting also applies (FASB, 2000:paras. 40-41). Furthermore, the entity is deemed to have reduced the exercise price if it replaces the original option with a new option with a lower exercise price within either one of the following periods:

- the shorter of six months prior to the date of cancellation or the period from the date of the grant of the cancelled option, or
- the period ending six months after the date of the cancellation.

(FASB, 2000:para. 45.)

However, because of the specific time frames given in FIN 44, US companies like WorldCom and Eastman Kodak subverted the above rule by replacing their underwater ESOs after the minimum waiting period – exactly six months and one day after cancelling the existing options. This technically is not considered a “repricing” in terms of FIN 44 and therefore, the companies would account for their repriced ESOs like a fresh issue of ESOs under APB 25, requiring zero compensation expense (assuming they were fixed awards). (Grant & Ciccotello, 2002:40-41.) This demonstrates the danger of an accounting standard specifying an accounting requirement based on a specified time framework since this can lead to manipulation and avoidance of the objective of the accounting standard.

## 5.5. ACCOUNTING FOR THE DEFERRED TAX CONSEQUENCES OF AN ESO CONTRACT

### 5.5.1. Introduction

Whether the compensation expense arising from an ESO transaction is deductible for tax purposes, and if so, whether the amount of the tax deduction is the same as the expense for accounting purposes and whether the tax deduction arises in the same accounting period, varies from country to country (IASB, 2002a:para. BC295). For example, as mentioned in Chapter 2 (para. 2.9.2), in the United States section 83(h) of the Internal Revenue Code allows companies to deduct from their taxable income an amount equal to the intrinsic value of their ESOs at exercise date (United States of America, 1986:sec. 83(h)). In other countries like South Africa and the United Kingdom, at the time of writing, no corporate tax deduction was allowed for ESOs whatsoever.

In terms of IAS 12 – *Income Taxes* and Statement No. 109 (SFAS 109) – *Accounting for Income Taxes*, the enterprise is to account for the tax consequences of transactions in the same way as it accounts for the transactions themselves (IASB, 1996:Objective; FASB, 1992:para. 6). As tax on transactions does not always accrue in the same period of the transaction for accounting purposes, both IAS 12 and SFAS 109 require companies to accrue a taxation charge known as *deferred taxation*. In essence, deferred tax arises when the amount of the transaction for taxation purposes is taxable in one period but for financial accounting purposes it is recorded in a different period. A deferred tax charge or a provision for future taxes payable or receivable is made so as to adjust the tax expense recognised for tax purposes (known as *current tax*) to match the profit recognised for accounting purposes. The deferred taxation charge is reversed out when both accounting and taxation have recorded the relevant transaction.

Both IAS 12 and SFAS 109 state that deferred tax must be provided on all *temporary differences*, which are differences between the *carrying amount* of assets and liabilities for accounting purposes and the *tax base* thereof for taxation purposes (IASB, 1996:paras. 5, 15 & 24; FASB, 1992:paras. 11 & 16). Temporary differences represent timing differences between the recording of items for accounting purposes

and the recording thereof for tax purposes. Deferred tax is provided on such temporary differences at the tax rate expected to apply to the period when the transaction will be taxable or deductible for taxation purposes. (IASB, 1996:para. 47; FASB, 1992:para. 17.) Although not specifically compliant with the definitions contained in IAS 12 or SFAS 109, one could think of the term “carrying amount” as being the portion of the carrying amount *currently recorded* for financial accounting purposes in respect of the asset or liability, which is taxable or deductible for tax purposes in the current or future periods. The term “tax base” would then refer to the asset or liability amount *currently recorded* in the books of the revenue authorities in respect of the transaction, deductible or taxable in the current or future periods. In terms of IAS 12 and SFAS 109, the journal entry for deferred tax is to either debit or credit a deferred tax liability or deferred tax asset account and the contra entry depends on where the initial transaction was recorded for accounting purposes. For example, if the transaction causing deferred tax was recorded in the income statement for accounting purposes, deferred tax thereon would be provided in the income statement. However, if an amount of a transaction was recorded in equity, deferred tax thereon would also be charged to equity.

In order to apply the above treatment to ESOs, it is assumed that the company will be allowed a tax deduction in terms of section 83(h) of the Internal Revenue Code equal to the intrinsic value of the ESO at exercise date. If it assumed that outstanding ESOs are classified as equity and that none of the ESO cost is capitalised to an asset, for accounting purposes the carrying amount of the asset arising from the ESOs is zero (since the service assets are fully amortised) and there is no carrying amount of any liability since outstanding ESOs are classified as equity. Since the revenue authorities only allow a tax deduction upon the exercise of the ESOs, over the life of the ESOs, they would have effectively debited a service asset valued at the ESOs’ intrinsic value and credited a share options account in equity but only charge the service asset as an expense when the ESOs are exercised. Effectively they would have passed only the first of the two entries described in paragraph 3.6.2. Therefore, the revenue authorities would have a service asset in their books valued at the intrinsic value of the ESOs, which would be the tax base. The difference between the carrying amount of the service asset (zero) and the tax base thereof (service asset equal to the intrinsic value of the ESOs) creates a temporary difference on which deferred tax

must be provided for. The deferred tax expense or benefit would be charged to the income statement and not to equity since the compensation expense would have been charged to the income statement.

Despite the above results, much controversy exists as to how one should account for the deferred tax consequences of ESOs. The treatment of deferred tax as suggested by the FASB and the IASB is addressed in the following paragraphs. For the purposes of these paragraphs it is assumed that the company in question will be allowed a tax deduction in terms of section 83(h) of the Internal Revenue Code.

### **5.5.2. SFAS 123**

SFAS 123 requires that US companies raise deferred taxation based on the cumulative amount of compensation cost recognised for financial accounting purposes to date, rather than the expected future tax deduction based on the present intrinsic value of the award. The reasons given for such treatment were that it would be easy to apply and would produce less volatility in reported net income, and would be consistent with the recognition of the tax effects of share-based awards for companies that continued to apply APB 25 for their ESO compensation awards. (FASB, 1995:paras. 42 & 226-227.) However, it is submitted that this treatment is technically incorrect as it does not comply with the requirements of SFAS 109 or IAS 12, because the future tax deduction the company receives depends on the changes in the ESOs' intrinsic value – not based on their fair value for accounting purposes. Therefore the correct method would be for the company to accrue deferred tax based on the ESOs' intrinsic value at each reporting period until exercise date as described in paragraph 5.5.1.

In addition, SFAS 123 only accrues compensation expense up until the employees' services have been fully performed (usually at vesting date). Accordingly, the company will stop accruing deferred tax at this date despite the fact that the deferred tax is a function of the intrinsic value of the ESOs at exercise date. It is submitted that this treatment is technically incorrect since the full tax deduction is not being reflected in the accounts. Furthermore, another peculiar aspect of SFAS 123 is the treatment of deferred tax upon the exercise of the ESOs. At the exercise date (or the expiry

date if the ESOs expire unexercised), after the current tax expense or benefit is determined, the following entries are to be made to write off the deferred tax asset:

- If the corporate tax deduction exceeds the cumulative compensation cost for that award recognised for accounting purposes, the tax benefit from that excess deduction is to be credited in equity as additional share capital.
- If the corporate tax deduction is less than the cumulative compensation cost, the write-off of the related deferred tax asset in excess of the benefits of the tax deduction, is to be debited to the tax expense in the income statement. However, to the extent that there is remaining additional share capital from excess tax deductions from *previous* ESO compensation awards, the amount of the write-off is to be charged against that additional share capital.

(FASB, 1995:paras. 44 & 296.)

The reasons given by the FASB for such treatment were that it felt that this treatment was consistent with APB 25 in that any additional tax benefits that arise upon the exercise of ESOs are not attributable to the compensation expense, and are rather attributable to the issue of the underlying shares at the exercise price which is an equity transaction that should be charged to equity instead. On the other hand, it contended that the adjustment if the tax deduction is less than the accounting deduction, is merely a change in accounting estimate in respect of the tax already accrued in respect of the ESOs. Consequently, in this case the deferred tax asset is reversed against the tax expense in the income statement. (FASB, 1995:paras. 228-229; APB, 1972:paras. 17 & 20.) It is contended that such conclusions have not matched the deferred tax with its related transaction. Movements in the ESO value affect compensation expense in the income statement since the ESO is an instrument used to compensate the employee. Consequently, deferred tax thereon must be accounted for consistently with the related transaction through the income statement. Use of the SFAS 123 method of accounting for deferred tax results in inconsistent treatment of deferred tax for like transactions. Appendix A contains an illustrative example of the accounting for the deferred tax consequences of ESOs using the guidelines set by SFAS 123.

### 5.5.3. ED E-124

ED E-124 required companies to create a deferred tax liability at grant date based on the temporary difference created by the total prepaid compensation asset recognised at grant date for accounting purposes. The contra entry would be charged to the share options account in equity. Thereafter, the deferred tax liability would be reversed out against the tax expense to reflect the decrease in the temporary difference as and when the prepaid compensation asset is amortised. (FASB, 1993:paras. 29 & 201-203.) Like SFAS 123, ED E-124 also required that the amount by which the tax deduction exceeds the total prepaid compensation asset at grant date should be charged to share capital. The reasoning behind such treatment was that it was consistent with SFAS 109 which requires the tax consequences of an event that increases or decreases share capital to be allocated to share capital. (FASB, 1993:paras. 29, 201-203 & 206; FASB, 1992:para. 36.) ED E-124 would also only account for the deferred tax consequences up until the expiry of the services rendered by the employee. The ED E-124 treatment suffers from the same limitations as SFAS 123 as described in paragraph 5.5.2. Appendix A contains an illustrative example of the accounting for the deferred tax consequences of ESOs using the guidelines set by ED E-124.

### 5.5.4. ED 2 and the G4+1 Paper

The G4+1 Paper did not specifically address the deferred tax consequences of ESOs but presumably would have followed a similar approach to ED 2. However, ED 2 did discuss the deferred tax consequences of ESOs in its *Basis for Conclusions* issued together with the *Exposure Draft*. ED 2 disagrees with the deferred tax treatment proposed by the FASB in a number of respects. Firstly, it requires the company to provide for deferred tax based on the difference between carrying amount and the tax base of the ESOs as described in paragraph 5.5.1 above. This is in contrast to SFAS 123, which requires that deferred tax to be computed solely on the compensation expense for accounting purposes. Therefore, if a company is allowed a section 83(h) tax deduction, ED 2 requires that a deferred tax asset be raised based on the ESOs' intrinsic value at the end of each period up until either the ESOs are forfeited or exercised and it would not be discontinued when the services of the employee are

fully rendered. (IASB, 2002d:Example 5.) This treatment is correct and is consistent with the accounting for deferred tax on other transactions other than ESOs.

Secondly, ED 2 requires that all the tax effects of an ESO transaction should be charged to the income statement. It argues that the tax deduction relates to employee compensation expense, i.e. an income statement item, and therefore the tax effects of the deduction should be recognised in the income statement. (IASB, 2002a:paras. BC303 & BC305.) Such accounting for deferred tax reflects the symmetry between the accounting for the taxation effects of a transaction and the transaction itself. Furthermore, ED 2's conclusions are in line with Hanlon and Shevlin (2002:1) who demonstrated that by accounting for the ESO tax benefit with a charge to equity instead of the income statement, this caused analysts to erroneously ignore the tax benefit entry. This resulted in their current tax calculations being overstated which may have caused them to overestimate taxable income and the marginal tax rate of companies. Such results provide evidence regarding the debate surrounding the gap between corporate tax payments and the reported book profits of the company. These authors also found that the ESO tax allowance should be accounted for as a cash inflow recognised on the cash flow statement. (Hanlon & Shevlin, 2002:1, 3 & 14.) This is precisely what Kirschenheiter, Mathur, and Thomas (2003:7) suggested. Such treatment of deferred tax and current tax is illustrated in Appendix A. Hanlon and Shevlin (2002:9) pointed out that only 43 out of 100 examined companies disclosed this benefit separately. They concluded that failure to adjust a company's tax expense by the ESO tax benefit, could lead to material error in calculations and inferences (Hanlon & Shevlin, 2002:1). Appendix A contains an illustrative example of the accounting for the deferred tax consequences of ESOs using the guidelines set by ED 2.

## 5.6. DISCLOSURE OF ESOs

The IASB Framework declares that

“the objective of financial statements is to provide users with information about the financial position, performance and changes in financial position of an entity that is useful to a wide variety of users making economic decisions” (IASB, 2000:para. 12).

Such information is usually in the form of numbers on financial statements yet financial statements often contain further notes and supplementary schedules and

other information explaining and expanding on the information in the financial statements. (IASB, 1989:para. 21.) As ESOs are a form of employee compensation, which is always a highly contentious issue, financial statements must be very transparent about the ESOs outstanding at the company in question. Rather than discussing the disclosure requirements suggested by each accounting standard separately, it is more succinct to present a model disclosure of the required information that companies ought to disclose regarding ESOs. The model presented in this study is as broad as possible and incorporates the disclosure and accounting requirements of ED E-124 (paras. 30 & 268-269), SFAS 123 (paras. 45-48), and ED 2 (paras. 45-53 & Appendix D) as well as additional disclosure requirements suggested by IAS 19 (paras. 146-152 & Appendix B). (The G4+1 Paper did not address disclosure.) Whilst formulating the model, certain gaps in the disclosure recommended by the above accounting standards were identified. The following additional disclosures have been incorporated into the model:

- A reconciliation of the share options account balance from the beginning to the end of the period.
- Accounting policy notes regarding ESO plans
- Shareholder approval obtained for the relevant ESO plan.
- Splitting the analysis of the ESOs on a plan-by-plan basis and on a total basis.
- Details of the option-pricing model used to value the ESOs and the treatment of reload features.
- Disclosure regarding modifications of ESO awards.
- Disclosure of the weighted average fair value per option for options outstanding at the beginning and end of the year, those granted, exercised, forfeited, or expired during the year.
- The taxation effect that the ESO expense has had on the company's tax expense.

The model assumes that outstanding ESOs are equity and therefore does not incorporate disclosure for ESOs accounted for as liabilities under exercise date accounting. Furthermore, the model does not give disclosures for directors' emoluments nor does it give disclosure regarding related party transactions as these are separate issues not within the focus of this study. It must be emphasised that the disclosure model set out below is meant to be a meaningful *guideline* to users of financial statements. Consideration as to the materiality of the amounts in question



and the cost versus benefit of disclosing such information must be weighed up by the company in question. A balance must therefore be struck between providing relevant and meaningful disclosure versus excessive disclosure. Such determination is to be made by the company itself with reference to its own specific circumstances in conjunction with its auditors whilst still adhering to the prevailing generally accepted accounting practice (GAAP) standards.

### 5.6.1. Accounting policy notes

The accounting policy notes must disclose the following:

- The fact that the fair value of ESOs are estimated at grant date/vesting date and are allocated over the employees' service period so as to match the compensation expense to the relevant services rendered by the employees.
- The fact that the fair value is computed using an option-pricing model.
- The classification of outstanding ESOs as equity.
- The treatment of ESOs with a cash-settlement alternative.
- The treatment of reload features (i.e. whether they are incorporated into the valuation of an ESO or they are adjusted as new issues of ESOs as and when they occur).
- The treatment of modifications of awards.
- The treatment of deferred tax relating to ESOs.

### 5.6.2. Share options account

The amount included in the share options account in respect of the ESOs should be reconciled as follows:

	R 'million
Opening balance	XXX
Recognised as compensation expense	XXX
Transferred to share capital & premium upon exercise	(XXX)
Transferred to share capital and premium upon forfeiture or cancellation	(XXX)
Closing balance	<u>XXX</u>

### 5.6.3. Share option plans

#### 5.6.3.1. Analysis per option plan

For each share option plan, the following should be disclosed. (If it is impractical to disclose the following information for each plan due to the volume of the ESOs, similar plans may be grouped together and weighted average figures may be used.)

##### *Details of the plan*

- The date when the ESOs were granted.
- The number and class of employees participating in the ESO plan.
- The contractual life of ESOs granted.
- Whether the exercise price is fixed or variable. If it is variable, how the exercise price is to be determined must be disclosed.
- The vesting requirements, including service conditions and performance conditions.
- The requisite shareholder approval obtained for the option scheme.

##### *Reconciliation between opening and closing balances of options under the plan*

	<b>Number of options (millions)</b>	<b>Weighted Average fair value per option</b>
Opening balance	XXX	XXX
Granted to employees/directors	XXX	XXX
Exercised	XXX	XXX
Expired	(XXX)	XXX
Forfeited	(XXX)	XXX
Closing balance	<u>XXX</u>	

##### *Fair value computation*

The manner in which fair value has been computed, should be disclosed which would require the following details to be disclosed:

- The option-pricing model used and the inputs to that model, including share price, exercise price, expected volatility, option life (including whether the expected life or the contracted life was used), expected dividends, the risk-free interest rate and any other inputs to the model.

- Historical volatility and an explanation of the differences between historical and expected volatility, or an explanation of how expected volatility was determined if it was not based on historical volatility.
- An explanation of how the risk-free interest rate was determined.
- The assumptions made with regard to vesting conditions and an explanation of how vesting conditions have been taken into account in measuring fair value, including the resulting impact on the fair value measure.
- Whether and how a reload feature and any other specific features of the option grant were incorporated into the measurement of fair value.

#### *Analysis of movements in ESOs during the period*

The number, exercise dates, exercise prices, market prices of the underlying shares and fair value of the share options that have, during the period been:

- granted,
- exercised, and
- lapsed.

#### *Analysis of the closing balance of outstanding ESOs*

For the outstanding ESOs at balance sheet date in respect of the option plan, the following should be disclosed:

- Number of options unvested at the period-end.
- Number of options vested at the period-end.
- Comparison between the number of options estimated to vest at grant date with the number of options that actually vested.
- The exercise prices of outstanding options.
- The remaining expected lives of the options, their contracted lives and the expiry dates of outstanding options.
- The fair value of outstanding options at the balance sheet date.

#### *Modification of awards*

Should the option plan have been modified during the period, the following should be disclosed:

- Authorisation for the modification.

- Details regarding the exact terms of the modification.
- Reasons for the modification.
- Effect of the modification on the income statement.

### 5.6.3.2. Analysis of options on a total basis

The company should disclose the following on a total basis

	<b>Number of options (millions)</b>	<b>Weighted average exercise price</b>	<b>Weighted average fair value per option</b>
Opening balance	XXX	XXX	XXX
Granted to employees/ directors	XXX	XXX	XXX
Exercised	(XXX)	XXX	XXX
Expired	(XXX)	XXX	XXX
Forfeited	(XXX)	XXX	XXX
Closing balance	<u>XXX</u>		

In respect of the number of options outstanding, the following must be disclosed:

- Number of option holders.
- Number of options vested and unvested at the period-end.
- Number of options in-the-money and underwater.
- Total proceeds should all the outstanding ESOs be exercised.
- Percentage of ESOs outstanding to the total number of shares outstanding.
- Average remaining term of options.
- Largest number of options granted to one individual.
- Average number of options granted to each individual.
- Smallest number of options granted to one individual.

### 5.6.4. Compensation expense recognised in the income statement

The amount of the compensation expense associated with ESOs recognised under salaries and wages (or directors' emoluments) should be disclosed separately. The taxation effect should also be disclosed. In addition, further disclosures regarding directors' emoluments will be required depending on the company law in the relevant country.

## 5.7. SUMMARY AND CONCLUSIONS

This chapter explored the accounting consequences of ESOs with a cash-settlement alternative, reload features and the modification of ESOs. For ESOs with a cash-settlement alternative, both the FASB (with the exception of APB 25) and the IASB require that if the employer has the choice of settlement, the instrument must either be a liability or equity, depending on the substance of the agreement and the probability of settlement with cash. However, if the choice of settlement rests in the employee's hands, the instrument is a liability. A combination of such awards (known as a tandem award) is accounted for as a compound financial instrument split into liability and equity components. It is submitted that the splitting between the debt and equity elements of more complex ESO instruments is complex and difficult for the user to understand which would not meet the qualitative characteristic of "understandability" of the IASB Framework. Instead, it is suggested that all types of ESOs should be classified as liabilities per the proprietary approach so as to achieve consistency between the various instruments. This results in the fair value of the entire instrument being remeasured each period until the earlier of exercise date or expiry of the ESO. This will show the opportunity cost of the ESOs in the financial statements consistently and comparability between the accounting for various ESO instruments will be achieved.

The entries for the various permutations that can occur upon the settlement of ESOs with a cash-settlement alternative were not comprehensively addressed in the accounting standards examined. However, the conclusions which can be gleaned from such accounting standards are that the entries to be made differ depending on whether the employer has the choice of settlement or whether the employee has the choice of settlement. In essence, if the employer has the choice of settlement, the excess of the amount paid to the employee over the fair value of the alternative settlement payment at settlement date, is treated as additional compensation expense. However, if the choice of settlement of the ESO rests with the employee, only if the instrument is settled with a cash payment, is any excess charged to compensation expense. Otherwise, it is charged to accumulated profit in equity. It must be noted that ED 2's approach of continuing to accrue costs for non-vested ESOs which are cancelled for reasons other than forfeiture, is academically unsound.

Rather, from the date of cancellation, the recognition of an expense for these ESOs should cease.

The chapter also briefly delved into the accounting for a reload feature. All the accounting standards examined in the chapter, with the exception of APB 25, would ideally have the reload feature valued together with the original options. However, because of measurement uncertainties, the reload feature may be accounted for as a separate grant. It is felt that if companies are allowed an alternative as to whether or not to incorporate the reload feature into the ESOs at grant date, this will result in inconsistent and incomparable accounting by different enterprises. Due to the complexity and estimates required to measure the reload feature at grant date, companies should rather treat the reload option granted as new option grants and not incorporate the reload feature into the original option grant valuation.

The chapter then addressed the accounting consequences as a result of the repricing or modification of other terms of an ESO. In essence, all the accounting standards examined, with the exception of APB 25, require that a modification of the ESO terms must be treated as a separate option grant in addition to the existing option grant. Such value is calculated as the difference between the fair value of the repriced option and the original option, both estimated at the repricing date. It is concluded that such treatment is correct since it reflects that the company is compensating the employee extra by repricing the ESO. The chapter also briefly examined the economic consequences of repricing. It is argued that repricing of ESOs may be beneficial in certain situations and a balance needs to be struck between allowing indiscriminate repricing and repricing to reincentivise management in an economic downturn where share prices are falling. It is felt that by recognising ESOs in the financial statements, entities will be scared to reprice ESOs indiscriminately. Rather only if the cost exceeds the benefits thereof will repricings occur. This should curb abnormal repricings and any repricing that does occur, will be beneficial to the company.

The chapter dealt with the deferred taxation consequences of ESOs. The statements issued by the FASB require that deferred tax be recognised based on the amount recognised as compensation expense for financial accounting purposes. On the other hand, ED 2 issued by the IASB requires that deferred tax be provided based on the

future tax deduction the company will receive in respect of the ESOs. It is concluded that ED 2's approach of providing for deferred tax on ESOs like any other transaction is correct and no exception should be made for ESOs in this regard. Furthermore, the statements issued by the FASB require the amount by which the tax deduction exceeds the compensation expense recognised for accounting purposes to be charged to share capital. The reason given for this is that additional tax benefits that arise upon the exercise of ESOs are not attributable to the compensation cost of ESOs, and are rather equity transactions. ED 2 disagrees with this treatment and requires all taxation to be charged to the tax expense because the tax deduction relates to employee compensation expense (an income statement item), and therefore the tax effects of the deduction should also be recognised in the income statement. It is concluded that ED 2's approach is more accurate since the tax expense relates to the compensation expense, hence the taxation effect must be recognised in the income statement as well.

The chapter closed off with a suggested disclosure model for ESOs. The model was based on the disclosure suggested by the statements issued by the FASB and the IASB as well as additional disclosures identified during the study to fill certain gaps identified. Disclosure of information regarding ESOs to shareholders is extremely important in the light of the many corporate scandals locally and abroad regarding abuse of ESOs as a compensation tool. However, it must be emphasised that the level of disclosure should vary according to the materiality of the amounts and transactions involved.

## CHAPTER 6

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### 6.1. INTRODUCTION

The primary objective of this research study was to critically analyse the problems inherent in the accounting treatment for employee share options (ESOs). To address this objective, the proposals of the US Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) were considered and a comprehensive literature survey of the issues surrounding the accounting for ESOs was undertaken.

#### 6.2. SUMMARY OF THE RESEARCH

The literature review in chapters 2 to 5 is summarised below. The conclusions from each of these chapters are presented in paragraph 6.3 below.

In Chapter 2, the principal-agent problem of external capital was defined as being the problem associated with the separation of management and ownership of corporate funds. This agency problem or moral hazard has beleaguered corporate finance scholars since its “discovery” in 1932 with the advent of the modern corporation described by Berle and Means. The chapter indicated how using equity-based compensation, with its alignment of corporate interests with those of the directors, helps ameliorate the moral hazard. The technical workings of option contracts were then described and their use in commerce was enumerated. The basics of how traded share options operate and some of the differences between ESOs and traded share options were then explained. It was found that an ESO is a call option on the employer’s shares (i.e. a right to buy shares in the company at the exercise price as opposed to the current market price) written by the company and granted to the employee to compensate him for his services.

The chapter went on to explore the various share option schemes available in the United States, the United Kingdom and the Republic of South Africa. In contrast to South Africa, it was found that tax favourable share option schemes could be set up in the United States and the United Kingdom, provided the employer complies with the



legislative requirements in the relevant country. The chapter closed off with the ongoing corporate finance debate as to whether ESOs do in fact help solve the agency problem. Recent abuses of share option grants to executives were highlighted. It was found that, although valid arguments exist supporting the use and non-use of ESOs, ESOs are not a magical wand that can be used to solve a company's agency problem. Rather, they are merely a tool that must be used with circumspection coupled with strong ethics and internal controls to help motivate employees and management to achieve the organisation's goals.

Chapter 3 examined the accounting standards developed by the United States, the United Kingdom, South Africa and the IASB. It was found that at the time of writing, none of the standards in force by any of the accounting standard setting bodies required companies to consistently expense ESOs through the income statement. Only exposure drafts issued by the FASB and the IASB required companies to expense ESOs. This favourable accounting treatment contributed to an unprecedented growth in the number of ESOs being granted.

It was found that the debate surrounding the expensing of ESOs was a highly political and contentious debate, so much so that it even reached the President of the United States. The proponents of not expensing ESOs (the "non-expensers") argued that ESOs are already disclosed in the diluted earnings per share number; ESOs do not meet the definition of an expense; ESOs are capital transactions and that ESOs cannot be measured reliably. For these reasons, they felt that ESOs should not be expensed in the financial statements. The non-expensers also felt that by expensing ESOs, this would harm young businesses from being established. In addition they contended that ESOs should not be used as a scapegoat for the many corporate collapses in the United States in early 2002.

Perhaps, Warren Buffet best summarised the arguments presented by the proponents for expensing ESOs (the "expensers") when he said: "if options aren't a form of compensation, what are they? If compensation isn't an expense, what is it? And if expenses shouldn't go into the calculation of earnings, where in the world should they go?" (Border, 2002.) The expensers controvert all the arguments presented by the non-expensers and in fact find that the arguments of the non-expensers are sometimes self-contradictory. Such proponents prove that outstanding ESOs do meet

the definition of an expense and are not capital transactions. They contend that by not expensing ESOs, this overstates corporate earnings and has the effect of misleading investors. In addition, they demonstrate that the use of the diluted earnings per share number is inadequate and that a disclosure model is an insufficient substitute for recognition of items in the primary financial statements. Finally, they point out that ESOs can be reliably measured and that accounting for ESOs will have definite positive economic effects contrary to popular belief.

Chapter 4 briefly examined the factors affecting the value of traded share options. It was found that the value of an option is a function of its intrinsic value, the time to expiry date, the volatility of the underlying share price, the risk-free interest rate, and the dividends expected during the life of the option. The chapter then briefly explored the Black-Scholes model and the Cox-Ross-Rubenstein binomial option-pricing model. It was found that option-pricing models were considered extremely important in the business world, so much so, that the developers thereof won the Nobel Prize in Economic Sciences. The chapter examined different measurement methods for ESOs. However, only the fair value model was accepted as being the most sound valuation technique since the other valuation models undervalued ESOs and the use of fair value accounting is now commonplace in modern accounting standards.

Differences between traded options and ESOs were enumerated. These differences stem from the fact that the lives of ESOs are stochastic, vesting conditions create the possibility of an option being forfeited for reasons other than being underwater and the illiquidity and inability to hedge vested ESOs create the incentive for executives to exercise their ESOs earlier than comparative traded options. Although option-pricing models create only estimates of the value of ESOs, it was found that the objective when valuing ESOs for accounting purposes was to estimate the arm's length price that the option holder (the company) and the option holder (the employee) would agree to for the option. It is this amount, which is equivalent to the option premium the company could receive had it issued the ESOs on the market, which must be determined when using option-pricing models. Therefore, the squeal by investors that option-pricing models overvalue ESOs would need to be reconsidered in this light since the value that the employee may place on the options may be different to the arm's length equilibrium price due to his risk premium being different to that of the issuing company. The chapter investigated the various suggestions on how to adapt

existing option-pricing models to ESO contracts. The use of a forfeiture rate to account for vesting conditions and expected life to account for non-transferability and non-hedgeability effects of ESOs were suggested by the IASB and the FASB.

The various measurement dates for valuing ESOs were considered. The term “measurement date” refers to the date when the ESO is valued for the purposes of determining the compensation expense for accounting purposes. Such date is equivalent to the issue date of the ESO i.e. the date when the rights in terms of the ESO contract become crystallised. The advantage of grant date measurement is that it reflects the arm’s length transaction value that the employer and employee had in mind when entering into the ESO contract. Vesting date measurement presumes that until vesting date, ESOs are contingent instruments which only become absolute rights (i.e. are issued) at vesting date when no further conditions need to be met to acquire the rights under the ESO. Such treatment is consistent with the recognition of a share purchase warrant issued by the enterprise. Service date accounting presumes that the issue of ESOs is a continuous process which occurs throughout the service period. Exercise date accounting presumes that ESOs are contingent financial instruments up until they are finally exercised or forfeited.

The question of whether outstanding ESOs are equity or liabilities was considered. Justification for the equity approach was that the settlement of an obligation with equity instruments (not being an “asset” of the employer), converts that obligation to equity in terms of the existing definitions of equity and liabilities in the accounting frameworks of the FASB and the IASB. However, if the settlement thereof is in “assets”, the obligation is a liability which is remeasured at the end of each period, in contrast to equity instruments which are not remeasured after issuance date. Consequently, because ESOs create an obligation on the part of the entity to issue its shares (not “assets”) at the exercise price to settle the ESO, the accounting standards and exposure drafts examined in this chapter favoured classifying ESOs as equity. However, the proponents of liability classification argued that because ESOs are economically equivalent to cash-settled share appreciation rights (SARs) which are classified as liabilities, ESOs should also be classified as such to reflect the economic equivalence of the two transactions. Further justification for such approach is given below.

Finally, the chapter investigated the accounting consequences of allocating the ESO cost over the service period. All the accounting standards favoured allocating the ESO's value as an expense over the period of service (or if not defined, the vesting period) per the accrual concept. APB 25 required that the intrinsic value of the ESO for each period-end was to be determined until both the number of shares the employee is entitled to and the exercise price are known. This method had the disadvantage of fixed plans having zero compensation cost being charged to the income statement since the above variables are known at grant date when the intrinsic value of most ESOs is zero. SFAS 123 allowed companies the choice of either using a recognition model or a disclosure model. The recognition model used principles of both grant date accounting and vesting date accounting. The standard required companies to calculate the fair value of the ESO at grant date but to then adjust the compensation accrued for forfeitures of non-vested ESOs. ED E-124 favoured grant date accounting and capitalised the full ESO value at grant date to a prepaid compensation asset and amortised it over the service period. Such value would be adjusted for subsequent changes in both the number of ESOs forfeited as well as differences between the actual lives of the ESOs and their expected lives. The G4+1 Paper favoured a pure vesting date accounting method whereby the ESO would be remeasured each period until vesting date and adjusted for both fair value changes and forfeitures that occur during this period.

ED 2 favoured a pure grant date method of accounting and assumed that ESOs are executory contracts that result in equity instruments being issued as and when the employee's services are received. To value such services, the entity would deem the fair value of the ESOs at grant date to equal the value of the services to be received over the service period. To do this the entity would need to compute the fair value of an ESO under the scheme at grant date, multiply this by the total number of ESOs expected to vest and divide this by the expected number of units of service the employee is to render to the employer to arrive at a value per unit of service. Such value would be multiplied by the actual units of services rendered each period to arrive at the services received and ESOs issued in the relevant period. Finally, exercise date accounting was also explored which suggested remeasuring the fair value per ESO and adjusting the total ESO value for the number of ESOs forfeited and lapsed period-end until the earlier of exercise date or expiry of the ESO.

Such treatment would result in the truing up of the gain or loss made by the company in issuing the ESO to that made by the employee. In addition, the transaction amount recognised for ESOs would recognise the potential exposure existing shareholders would have to shares being issued at a discount to settle the ESOs.

Chapter 5 analysed the accounting treatment for ESOs with a cash-settlement alternative. All the accounting standards examined (with the exception of APB 25) treated ESOs with a cash-settlement alternative in which the *employee* has the choice of settlement as a liability being an obligation to pay the employee in cash (an “asset”) which meets the definition of a “liability”. However, if the choice of settlement rests with the *employer*, the ESO must either be a liability or equity, depending on the substance of the agreement and the policy of the enterprise to settle such instruments in cash or not. Should the compensation instrument contain both an ESO award together with another potential cash-settlement award whereby the employer can only exercise one of these awards upon settlement date (known as a tandem award), the accounting standards examined required that one splits the compensation instrument into a liability and equity components. The accounting entries upon settlement of such ESOs were examined as well.

The chapter looked into the accounting for a reload option. A reload option is where the employee exercises his options and pays the exercise price with existing company shares and is then granted further options in exchange for the shares tendered. All the accounting standards researched in the chapter, with the exception of APB 25, would ideally have required that the reload feature be valued together with the original option. However, because of measurement uncertainties, the reload feature was to be accounted for as a separate option grant. ED 2 allows the alternative of either incorporating the reload feature into the original option’s value at grant date or treating the reload option as a separate option grant.

Thereafter, the chapter addressed the media hype surrounding the repricing and other modifications of ESOs. Academic research showed that although repricing may be negative, it could have benefits to a company if it reprices the ESOs in certain circumstances. The accounting for repriced or modified ESOs mainly suggested that a modification of the ESO terms must be treated as a separate option grant in addition to the existing option grant. Such value would be calculated as the difference

between the fair value of the repriced option and the original option, both estimated at the repricing or modification date.

The chapter dealt with the deferred taxation consequences of ESOs. The requirements of the FASB that deferred tax should be based on the accounting expense for ESOs were found to be conceptually unsound as they were inconsistent with SFAS 109 and IAS 12. The approach of ED 2 in that deferred tax should be provided for as the difference between the ESOs' carrying amount and its tax base was considered superior. In addition, the approach of SFAS 123 of accruing excess tax deductions over the accounting expense into share capital was also considered unfounded due to the tax deduction relating to the ESO expense and not the exercise of the ESOs. The chapter ended with a suggested disclosure model for ESOs. The model was based on the disclosures suggested by the statements issued by the FASB and the IASB as well as further expansions on such requirements and would be only a suggested disclosure model which would need to be adapted for company specific circumstances and for materiality considerations.

### 6.3. CONCLUSIONS

The major conclusions drawn from this research study can be summarised as follows:

1. The separation of control and ownership of a firm creates an agency problem because the interests of the agent and the principal are often divergent.
2. The United States and the United Kingdom have advanced option schemes which allow favourable tax treatment if the statutory requirements of such schemes are met. South Africa falls short of the developments in such countries with respect to option-schemes used by South African companies.
3. Although mathematical evidence exists that ESOs can alleviate the moral hazard, in practice, corporate abuses and empirical evidence of abuses of ESOs, tend to disprove such mathematical theories. ESOs are therefore potentially dangerous tools if they are not controlled and are granted indiscriminately. However, if they are structured correctly and have strict performance targets and an exercise price linked to a performance benchmark, they can be useful tools to motivate management to achieve corporate goals.
4. Direct ownership of shares by the employee rather than owning ESOs, tends to align corporate interest with those of management far better than ESOs.

5. Accounting standards examined up to the date of writing did not mandate the expensing of ESOs. This caused an unbridled growth in share options being granted due to their favourable accounting effects as opposed to them being granted based on economic considerations.
6. Many of the arguments presented by the non-expensers of ESOs had little to do with accounting and were not conceptually based. The main reason that firms did not want to expense ESOs was it would expose the “free lunch” that they had been experiencing and it would reduce their earnings substantially. Consequently, many of their arguments were not based on sound academic principles, but were rather based on an attempt to keep open the accounting loophole no matter what.
7. By not expensing ESOs, this results in companies favouring the use of ESOs as compensation tools opposed to other compensation instruments based solely on biased accounting rules rather than economic fundamentals. This causes inflated profit figures, inflated share prices and does not allow ESOs to compete on an equal footing with other forms of compensation. This also misleads investors as to the true cost of capital of corporate ventures and causes inaccurate corporate accounts.
8. ESOs meet the definition of an expense and should be expensed in the financial statements as additional compensation expense. This will curb the number of ESOs being granted and cause companies to structure their ESO plans based on performance criteria so as to ensure their benefits exceed their cost.
9. The economics of an ESO transaction is that instead of paying the employee with cash, he is being paid with a financial instrument called an employee share option. Paying the employee with a different legal tender does not detract from the economic substance of the ESO transaction, being a payment made for services rendered.
10. The cost of an ESO is not the dilutive effect as a result of the issue of future shares to settle the ESO. Such cost is a cost to the individual shareholder which the company does not bear. Rather the economic nature of an ESO is that from the company’s perspective (option writer), the ESO represents an obligation upon it to issue its shares at the exercise price instead of the prevailing market price at exercise date. In other words, the company has an obligation to

effectively forfeit *in advance* the difference between the future market price of its shares at exercise date and the exercise price and it has used such potential forfeited proceeds to compensate the employee for his services rendered over the service period. The present value of such forfeited proceeds is equivalent to the option premium the company could have received had it issued the ESO on the market for cash. However, such obligation is only a *potential obligation* to the company since it is contingent upon both the fulfilment of vesting conditions as well as the options being in-the-money at the exercise date.

11. It was found that due to the immense political pressure placed on the FASB in 1994 by big businesses and government, it was forced to withdraw its proposal in ED E-124 requiring US companies to expense ESOs. It is concluded that the government and accounting standard setting bodies should be completely independent of one another otherwise biased and weak accounting standards get promulgated.
12. The technical mathematics surrounding option-pricing models is complex and must be left to finance scholars and mathematicians who understand these mathematical principles. Accountants should use the knowledge of such experts to value ESOs and audit such values for reasonableness and appropriate disclosure.
13. The fair value method of accounting making use of an option-pricing model is the most appropriate measurement method for valuing ESOs for accounting purposes. The reason is that it values the total value of the ESO consistently with other transactions in which resources are received in exchange for a financial instrument.
14. It is felt that it is the task of the FASB and the IASB to narrow down the selection of option-pricing models for ESOs and instead prescribe specific models so as to ensure comparability and consistency between companies. Otherwise, companies will tend to choose an option-pricing model which provides the lowest value of the ESOs so as to minimise the compensation cost associated with ESOs. This will in turn cause accounting numbers to be incomparable between companies that use different option-pricing models.
15. The objective when determining the value of ESOs for accounting purposes is to determine the equilibrium price a willing buyer and a willing seller would agree upon for such instruments in an arm's length transaction. Such



equilibrium price is equal to the opportunity cost or the alternative amount (i.e. the option premium) the company (*the option writer*) could have received had it issued the ESOs for cash on the market. This amount is equivalent to the present value of the potential forfeited proceeds the company may forfeit by issuing the underlying shares at the exercise price as opposed to the prevailing market price. The value of the ESOs to an executive is different from that of the issuing company due to the executive's risk profile differing from that of his company. The value of the ESO to the executive is therefore not relevant and should not be taken into account when determining the cost of ESOs for accounting purposes.

16. ESOs differ from traded options in that their option-terms are stochastic, vesting conditions create the risk of forfeitability before vesting date, they are illiquid and cannot be hedged. Such differences significantly complicate the valuation of ESOs and require existing option-pricing models to be adjusted to incorporate such differences. However, adjustments must be considered only from the company's perspective (i.e. the option writer) and not the executive's perspective (the option holder). Any factors affecting only the executive's value of an ESO (eg. non-tradability of an ESO) must not be adjusted when valuing ESOs for accounting purposes.
17. Outstanding ESOs are to be classified as *liabilities* using the proprietary approach since such a classification facilitates exercise date accounting and accords the same accounting treatment to that of SARs, which are economically equivalent transactions.
18. ESOs are executory contracts which must be recorded as and when the employees perform their services. *Exercise date accounting* is most appropriate for doing this accounting function since it best reflects the economic nature of the ESO transaction. The reason is that by remeasuring the ESOs each period until the earlier of exercise date or expiry date, the entity is in effect accounting for the contingent nature of the ESO obligation since it is dependent upon both the risk of forfeiture coupled with the risk that the ESOs will be underwater and expire unexercised. This recognises the opportunity cost of the ESO instruments to the company and the exposure that existing shareholders would have to shares being issued at below fair value to settle the ESOs. One can also justify exercise date accounting on the grounds that at vesting date the

ESO liability in payment for the employee's services is crystallised. Thereafter, since the liability is unpaid, the entity must pay interest thereon. Such "interest" is accrued in the form of fair value adjustments to the ESO liability until the earlier of exercise date or expiry of the ESO. In addition, by the employee agreeing to be paid in ESOs, the level of his services are a function of the above two risks and movements in the company's share price. By remeasuring the ESOs each period and recognising the fair value adjustments to the total ESO cost, this results in the financial statements recognising the symmetry between the ESO cost and the employee services. Exercise date accounting also trues up the expense recognised for ESOs to the gain (if any) made by the employee and the loss (if any) to the company of the ESOs in question which is the ultimate cost of the ESOs to the company.

19. The method proposed by ED 2 of using units of service method to allocate the compensation received, is theoretical and subject to manipulation and error. Such proposal should rather be considered as one of the alternatives of allocating the ESO cost over the employees' service periods. In addition, it is concluded that the ESO transaction can be looked at in two identical manners. Firstly, they can be thought of as instruments being paid for by the employee with his services. Alternatively, they can be thought of as instruments used by the company to compensate the employee for his services. Such views are economically identical and no distinction should be made between such views.
20. Future accounting standards promulgated should eliminate alternative accounting treatments and should rather have one accounting treatment for economically equivalent transactions. This ensures comparability and faithful representation of transactions.
21. If ESOs have a cash-settlement alternative, they should not be accounted for differently from any other ESO and they should therefore be marked-to-market at each period end until the earlier of expiry or exercise date. The approaches of the accounting standards examined in this study of splitting between the debt and equity components of the ESO instrument add extra complexity to the accounting transaction and are subject to management subjectivity. It is submitted that users prefer a consistent classification of financial instruments either as equity or a liability. To best achieve this, the proprietary approach should be used which requires any instrument that is not pure equity to be

classified as a liability. This recognises the exposure existing shareholders have to fair value changes in any instrument other than equity.

22. ESOs with a reload feature should be accounted for as two separate grants to avoid the manipulation and measurement uncertainties inherent in incorporating such value into the original ESOs' value.
23. Repricing of ESOs can be optimal in certain situations and a trade-off needs to be established between allowing indiscriminate repricing and repricing to reincentivise management. Perhaps it would also be optimal for repricing to occur both in a bull market where exercise prices should be raised and in a bear market where exercise prices should be lowered.
24. A modification of the ESOs' terms must be treated as separate option grants in addition to the existing option grants. Such value must be calculated as the difference between the fair value of the repriced option and the original option, both estimated at the repricing date. This reflects the fact that the company is compensating the employee extra by repricing the ESOs. Thus, the total ESO cost finally recognised will equate the fair value of the options based on their modified terms.
25. Deferred tax on the ESO should be provided normally like any other transaction being the difference between the carrying amount of the ESOs and their tax bases. No special deferred tax treatment should be made for ESOs. Current tax and deferred tax must be provided through the income statement.
26. Disclosure regarding ESOs must be useful to the user but at the same time it should be comprehensive. A trade-off must be established between excessive disclosure versus relevant, reliable and faithfully representative disclosure of transactions.

#### **6.4. RECOMMENDATIONS**

The main recommendations flowing from this research study are:

##### **6.4.1. Employee share option schemes in South Africa**

South Africa should have legislation in place which allows companies to set-up tax friendly share option schemes for their employees. Perhaps this would cause share options to become more broadly based in South Africa instead of being concentrated at the top of the organisation. However, it is suggested that the statutory requirements

for such tax favourable schemes must prescribe that vesting conditions include performance-related measures within the employee's control. For example, measures like return on equity in excess of the company's cost of capital or returns in excess of those achieved by companies in the same sector could be used as benchmarks.

#### **6.4.2. Independence of accounting standards setting authorities**

From the debacles in the United States in 1994 regarding ED E-124, it is suggested that accounting standard setting bodies must be independent of audit firms, government and big businesses. Accounting standards must be based on the economic fundamentals of transactions and not based on political pressures imposed on them.

Various stakeholders can be involved in commenting on the standards proposed, yet the final decision of the accounting standards being proposed must rest with the accounting standards board and not with its various stakeholders. This ensures transparency and fairness regarding the setting of accounting standards.

#### **6.4.3. Mandating of the expensing of ESOs**

It is also recommended that both the IASB and the FASB should mandate the expensing of ESOs in corporate accounts and not allow companies a disclosure-only alternative, as is the case with SFAS 123.

#### **6.4.4. Exercise date accounting should be required**

Companies should account for their outstanding ESOs as liabilities using an exercise date model of accounting. Such method of accounting shows the true economic cost of issuing ESOs and reconciles the accounting treatment of ESOs to other economically equivalent transactions.

#### **6.4.5. Areas for further research**

During the course of this research study, the following areas have been identified which need further research:

### 1. **The relationship between ESO grants and corporate performance in South Africa**

All of the research in Chapter 2 focused on studies conducted abroad on the association between ESO grants and corporate performance. The research on whether ESOs do in fact help achieve corporate performance in South Africa has not been published. This would be an interesting area of research seeing as though ESOs are concentrated at the top-end of the organisation in South Africa.

### 2. **The impact of exercise date accounting versus grant date accounting**

No accounting standard or exposure draft examined in this chapter favoured exercise date accounting. Research as to the impact of remeasuring ESOs until exercise date and the information relevance of such accounting would be a stimulating area of research. The impact of changing the definition of liabilities to include instruments which will be settled with shares would also need to be considered. In addition, the fluctuation in earnings caused by remeasuring such instruments would need to be investigated.

### 3. **Market effects of fair value accounting**

Fair value accounting has recently evolved to now encompass much of the accounting standards worldwide. Research needs to be undertaken as to the market effects of fair value accounting versus historical cost accounting. Analysts feelings as to whether such accounting is more informative or whether it produces unrealistic numbers which fluctuate due to short-term movements in underlying prices would need to be studied.

### 4. **Questions on the efficient market hypothesis theory**

It seems unrealistic to believe that share markets are efficient if a share market bubble could have occurred between 1995 and 2000. The fundamentals of the theory of the efficient market hypothesis are in question because if the market is efficient, how could it allow share prices to be so over-valued? A study of the drivers of share prices during the information technology (IT) boom and reasons

why share prices did not react to warnings of there being a bubble would need to be examined in this study.

## **6.5. PRACTICAL IMPLICATIONS OF ACCOUNTING FOR ESOs**

Expensing of ESOs will have a number of practical implications. The expense will be a non-cash item on the income statement with which analysts will be weary of due to the measurement uncertainties and contentious nature of the accounting for ESOs. Expensing of ESOs will no doubt cause a material decline in reported profit levels of companies. Accounting for ESOs will also cause volatility in company earnings should exercise date accounting be used. It is foreseen that management will also be reluctant to disclose sensitive information regarding their ESO plans for financial reporting purposes.

In addition, because of the technical complexities involved in accounting for ESOs, it will require that accountants acquire the technical skills to understand the issues involved in accounting for ESOs. The valuation and accounting treatment of more complex ESO plans may cause uncertainty especially when the accounting standard in question does not specifically address every issue that can occur in practice with ESOs.

However, in the long run accounting for ESOs will produce better earnings numbers, correct any distortions induced by not expensing ESOs and will not mislead investors as to the correct profits generated by companies. This should help prevent future share market bubbles from occurring and allow ESOs to compete on an equal footing with other compensation tools.

## **6.6. FINAL CONCLUSION**

The main findings of this dissertation are that ESOs should be expensed in the financial statements at the fair value thereof using an option-pricing model adjusted for the unique features of ESOs. To account for the economic nature of ESOs, outstanding ESOs should be classified as liabilities and accounted for using the exercise date accounting model. Additionally, it was found that ESO plans must be designed optimally with appropriate performance hurdles so as to allow such

compensation tools to compete equally with other compensation instruments. This would help ameliorate the moral hazard of external capital.

In conclusion, it is hoped that this dissertation has shed light on the heated debate that has ensued for the last 40 years as to whether, when and how one should account for outstanding employee share options. The IASB intends issuing a final accounting standard on employee share options by the first quarter of 2004. Perhaps this accounting standard will finally close this chapter in history on the accounting for share options or it may ignite further flames of debate which will continue for many years into the future.

## APPENDIX A – ILLUSTRATIVE EXAMPLE OF A FIXED OPTION PLAN

XYZ Ltd is a public company listed on the JSE Securities Exchange in South Africa and has a year-end of 31 December. On 1 January 2003, the company granted an equal amount of share options to each of its 3 000 employees.

All the options vest at the end of three years (cliff vesting). The following table shows the assumptions and information about the options granted:

Number of options granted	900 000
Expected forfeitures per annum	3% of the remaining options granted after forfeiture at the end of the previous year
Exercise price	R50
Option term	6 years
Weighted average expected life	5 years
Vesting period and service period	3 years

At the end of 2004, management changed its estimate of the employee forfeiture rate from 3% to 6% per annum from 2004 onwards. You may assume that forfeitures occur at the end of the relevant year and that the actual forfeitures between 2003 and 2004 were equal to the estimated forfeitures for those years.

At the end of 2005, the number of options that actually vested was 730 000. 300 000 options were exercised at 31 December 2005 and 330 000 options were exercised on 30 June 2006. The remainder of the options expired unexercised.

The following table provides the share price and fair value per option at the respective dates:

Date	XYZ Ltd share price	Fair value per option
1/1/2003	50.00	17.15
31/12/2003	52.00	18.00
31/12/2004	59.00	18.50
31/12/2005	70.00	19.00
30/6/2006	55.00	15.00



The above fair values have been computed using an option-pricing model before adjusting for the possibility of forfeiture due to failure of the employee to complete the required three-year period of service. The fair value of the option at 1 January 2003 assuming a contractual life of 3 years, 3.5 years, and 6 years was R10, R11 and R20 respectively.

Where applicable, the company's policy is to accrue compensation cost based on the best available estimate of the number of options that are expected to vest and to revise that estimate, if necessary, if subsequent information indicates that actual forfeitures are likely to differ from initial estimates. All such adjustments are treated as a retrospective change in accounting estimate to be applied in the period of the change. A final adjustment is made to reconcile the differences between the actual number of options that actually vested to the estimated number of options that were expected to vest. The company uses the estimated life of the options at grant date when computing the fair value per option. None of the compensation cost is capitalised as part of the cost to produce inventory or other assets.

You may assume that the intrinsic value of the options at exercise date is deductible for income tax purposes. Ignore the split between share capital and share premium and assume all proceeds on exercise of options are paid in cash. The company tax rate is 30% and each year the company will have a sufficiently large deferred tax credit balance which will be available to be set-off against any deferred tax debits arising from the scenario. Figures are to be rounded off to the nearest rand.

(Adapted from SFAS 123 (paras. 288-297))

*The different models proposed by the various accounting standards are illustrated below:*

### **Accounting under APB 25**

*For the period 1 January 2003 – 31 December 2005*

Because the option plan is a fixed plan and the exercise price equals the underlying share price at grant date, a compensation expense of zero is recognised.

31 December 2005

<b>A1</b>	Dr. Bank	50 x 300 000	15 000 000	
	Cr. Share capital and premium			15 000 000
	Being issuance of shares upon the exercise of the ESOs.			
<hr/>				
<b>A2</b>	Dr. Taxation liability [(70-50) x 300 000] x 30%		1 800 000	
	Cr. Share capital and premium			1 800 000
	Being current tax deduction upon exercise of ESOs.			
<hr/>				

30 June 2006

<b>A3</b>	Dr. Bank	50 x 330 000	16 500 000	
	Cr. Share capital and premium			16 500 000
	Being issuance of shares upon the exercise of the ESOs.			
<hr/>				
<b>A4</b>	Dr. Taxation liability [(55-50) x 330 000] x 30%		495 000	
	Cr. Share capital and premium			495 000
	Being current tax deduction upon exercise of ESOs.			
<hr/>				

*Expiry date – 31 December 2008*

No entry is made for forfeited and unexercised ESOs since they were never recorded in the books.

### **Accounting under SFAS 123**

*For the year ended 31 December 2003*

The total estimated value of the award is as follows:

$$900\,000 \times (97\%)^3 \times 17.15$$

$$= R14\,087\,108.$$

Therefore, the compensation expense to be recognised during each year of the three-year period (assuming there were no changes in the forfeiture rate estimate) is R4 695 703 (= R14 087 108 ÷ 3).

<b>S1</b>	Dr. Compensation expense		4 695 703	
	Cr. Share options equity			4 695 703
	Being recognition of compensation expense for 2003.			
<hr/>				
<b>S2</b>	Dr. Deferred tax liability	4 695 703 x 30%	1 408 711	
	Cr. Tax expense			1 408 711
	Being provision for deferred tax due to temporary difference created.			
<hr/>				

*For the year ended 31 December 2004*

Before the change in accounting estimate occurs, the company will have accrued compensation expense based on a forfeiture rate of 3% per annum. Hence the following entries would have been passed:

<b>S3</b>	Dr. Compensation expense		4 695 703	
	Cr. Share options equity			4 695 703
	Being recognition of compensation expense for 2004.			
<hr/>				
<b>S4</b>	Dr. Deferred tax liability	4 695 703 x 30%	1 408 711	
	Cr. Tax expense			1 408 711
	Being provision for deferred tax due to temporary difference created.			
<hr/>				

Thereafter, the compensation expense must be adjusted due to the change in the forfeiture rate from 3% to 6% at the end of 2004. To do this, the total value of the award must be re-estimated and accrued based on a forfeiture rate of 6%.

The revised total estimated value of the award is as follows:

$$900\,000 \times (94\%)^3 \times 17.15$$

$$= R12\,820\,064.$$

Revised cumulative cost to date (12 820 064 x 2/3)	8 546 709
Less: Cost already recognised to date (4 695 703 x 2)	(9 391 406)
Adjustment to compensation expense at 31/12/2004	<u><u>(844 697)</u></u>

<b>S5</b>	Dr. Share options equity		844 697
	Cr. Compensation expense		844 697
	Being adjustment of compensation expense and equity already recognised to reflect a higher estimated forfeiture rate.		

---

<b>S6</b>	Dr. Tax expense	844 697 x 30%	253 409
	Cr. Deferred tax liability		253 409
	Being adjustment to deferred tax to reflect the taxation effect of increasing the estimated forfeiture rate.		

---

*For the year ended 31 December 2005*

<b>S7</b>	Dr. Compensation expense	12 820 064 x 1/3	4 273 355
	Cr. Share options equity		4 273 355
	Being recognition of compensation expense for 2005.		

---

<b>S8</b>	Dr. Deferred tax liability	4 273 355 x 30%	1 282 006
	Cr. Tax expense		1 282 006
	Being provision for deferred tax due to temporary difference created.		

---

At 31 December 2005, the number of vested options is 730 000 options. Accordingly, compensation expense recognised to date must be adjusted to reflect the change in the number of options that were to vest. The revised total estimated value of the award is as follows:

$$730\,000 \times 17.15$$

$$= R12\,519\,500$$

Therefore, the adjustment to be made is computed as follows:

Revised cumulative cost to date	12 519 500
Less: Cost already recognised to date	(12 820 064)
Adjustment to compensation expense at 31/12/2005	<u><u>(300 564)</u></u>

<b>S9</b>	Dr. Share options equity		300 564
	Cr. Compensation expense		300 564
	Being adjustment of compensation expense and equity already recognised to true up actual forfeitures with estimated forfeitures.		

---

<b>S10</b> Dr. Tax expense	300 564 x 30%	90 169
Cr. Deferred tax liability		90 169

Being adjustment to deferred tax to reflect the taxation effect of a change in the forfeitures.

---

<b>S11</b> Dr. Bank	50 x 300 000	15 000 000
Dr. Share options equity	17.15 x 300 000	5 145 000
Dr. Accumulated profit (bal fig)		855 000
Cr. Share capital and premium	70 x 300 000	21 000 000

Being issuance of shares upon the exercise of the options.

---

<b>S12</b> Dr. Taxation liability		1 800 000
Cr. Tax expense	[(70-50) x 300 000] x 30%	1 800 000

Being current tax deduction upon exercise of ESOs.

---

<b>S13</b> Dr. Tax expense		1 800 000
Cr. Deferred tax liability	300 000 x 17.15 x 30%	1 543 500
Cr. Share capital and premium	[(70-50)-17.15] x 300 000 x 30%	256 500

Being writing off of deferred tax amount. The credit to share capital and premium is the excess of the deductible amount over the compensation expense recognised.

*Exercise date – 30 June 2006*

<b>S14</b> Dr. Bank	50 x 330 000	16 500 000
Dr. Share options equity	17.15 x 330 000	5 659 500
Cr. Share capital and premium	55 x 330 000	18 150 000
Cr. Accumulated profit (bal fig)		4 009 500

Being issuance of shares upon the exercise of the options.

---

<b>S15</b> Dr. Taxation liability		495 000
Cr. Tax expense	[(55-50) x 330 000] x 30%	495 000

Being current tax deduction upon exercise of ESOs.

<b>S16</b> Dr. Tax expense		1 697 850
Cr. Deferred tax liability	330 000 x 17.15 x 30%	1 697 850

Being writing off of deferred tax amount. There is no entry to share capital and premium since the compensation cost recognised is greater than the intrinsic value at exercise date.

---

*Expiry date – 31 December 2008*

<b>S17</b> Dr. Share options equity	100 000 x 17.15	1 715 000
Cr. Share capital and premium		1 715 000

Being book entry to recognise share options as share capital and premium upon the of unexercised ESOs.

---

<b>S18</b> Dr. Tax expense*	1 715 000 x 30%	514 500
Cr. Deferred tax liability		514 500

Being reversal of deferred tax amount due to non-exercise of ESOs.

---

\* Because the tax deduction (zero) is less than the accounting compensation expensed in respect of these ESOs, the reversal of the deferred tax is charged to the income statement.

### **Accounting under ED E-124**

*At 1 January 2003*

The total estimated value of the award is the same as SFAS 123 i.e. R14 087 108 (= R900 000 x (97%)<sup>3</sup> x 17.15). This amount is capitalised at grant date to a prepaid compensation asset.

<b>E1</b> Dr. Prepaid compensation asset		14 087 108
Cr. Share options equity		14 087 108

Being recognition of compensation asset at 1 January 2003.

---

<b>E2</b> Dr. Share options equity		4 226 132
Cr. Deferred tax liability	14 087 108 x 30%	4 226 132

Being provision for deferred tax due to temporary difference created from the grant of options on 1 January 2003.

---

*For the year ended 31 December 2003*

The prepaid compensation asset is charged to earnings over the service period.

<b>E3</b>	Dr. Compensation expense	14 087 108/3	4 695 703
	Cr. Prepaid compensation asset		4 695 703
	Being compensation expense for the year ended 31 December 2003.		

---

<b>E4</b>	Dr. Deferred tax liability	4 695 703 x 30%	1 408 711
	Cr. Tax expense		1 408 711
	Being adjustment of deferred tax liability to reflect the decrease in the temporary difference for the prepaid compensation asset.		

---

*For the year ended 31 December 2004*

Before the change in accounting estimate occurs, the company would have accrued compensation expense based on a forfeiture rate of 3% until 31 December 2004. Hence the following entries would have been passed:

<b>E5</b>	Dr. Compensation expense	14 087 108/3	4 695 703
	Cr. Prepaid compensation asset		4 695 703
	Being compensation expense for the year ended 31 December 2004.		

---

<b>E6</b>	Dr. Deferred tax liability	4 695 703 x 30%	1 408 711
	Cr. Tax expense		1 408 711
	Being adjustment of deferred tax liability to reflect the decrease in the temporary difference for the prepaid compensation asset.		

---

As with the SFAS 123 adjustment, the compensation expense under ED E-124 must be adjusted to reflect the change in the forfeiture rate from 3% to 6%. To do this, the total value of the award must be re-estimated and accrued based on a forfeiture rate of 6%. The revised total estimated value of the award is R12 820 064 (= 900 000 x (94%)<sup>3</sup> x 17.15). An entry must be made to readjust the value of the options granted on 1 January 2003 and the deferred tax thereon. This is computed as follows:

Revised total value of award	12 820 064
Less: Total value of award estimated at 1/1/2003	(14 087 108)
Adjustment to value of options at 1/1/2003	<u>(1 267 044)</u>

<b>E7</b>	Dr. Share options equity		1 267 044	
	Cr. Prepaid compensation asset			1 267 044
	Being adjustment to the value of options granted at 1 January 2003 to reflect changes in the forfeiture rate.			
<hr/>				
<b>E8</b>	Dr. Deferred tax liability	1 267 044 x 30%	380 113	
	Cr. Share options equity			380 113
	Being adjustment of deferred tax liability after the adjustment for the value of the grant of options on 1 January 2003.			
<hr/>				

Thereafter, an adjustment must be made to the compensation expense recognised to date and the deferred tax thereon, so as to account for the cost based on a forfeiture rate of 6%.

<b>E9</b>	Dr. Prepaid compensation asset		844 697	
	Cr. Compensation expense	1 267 044 x 2/3		844 697
	Being adjustment of compensation expense due to change in forfeiture rate.			
<hr/>				
<b>E10</b>	Dr. Tax expense	844 697 x 30%	253 409	
	Cr. Deferred tax liability			253 409
	Being adjustment of deferred tax due to change in forfeiture rate.			
<hr/>				

*For the year ended 31 December 2005*

<b>E11</b>	Dr. Compensation expense	12 820 064 x 1/3	4 273 355	
	Cr. Prepaid compensation asset			4 273 355
	Being compensation expense for the year ended 31 December 2005.			
<hr/>				
<b>E12</b>	Dr. Deferred tax liability	4 273 355 x 30%	1 282 006	
	Cr. Tax expense			1 282 006
	Being adjustment of deferred tax liability to reflect the decrease in the temporary difference for the prepaid compensation asset.			
<hr/>				

At 31 December 2005, the number of vested options is 730 000 options. Accordingly, compensation expense recognised to date must be adjusted to reflect the change in the number of options that were to vest. The revised total estimated value of the award is as



follows:

730 000 x 17.15

= R12 519 500.

Therefore, the adjustment to be made is computed as follows:

Revised cumulative cost to date	12 519 500
Less: Cost already recognised to date	(12 820 064)
Adjustment to compensation expense at 31/12/2005	<u>(300 564)</u>

<b>E13</b> Dr. Share options equity	300 564	
Cr. Prepaid compensation asset		300 564
Being adjustment to the value of options granted at 1 January 2003 to reflect changes in the number of options forfeited.		

---

<b>E14</b> Dr. Deferred tax liability	300 564 x 30%	90 169	
Cr. Share options equity			90 169
Being adjustment of deferred tax liability after the adjustment for the value of the grant of options on 1 January 2003.			

---

<b>E15</b> Dr. Prepaid compensation asset	300 564	
Cr. Compensation expense		300 564
Being adjustment of compensation expense due to change in options forfeited.		

---

<b>E16</b> Dr. Tax expense	90 169	
Cr. Deferred tax liability		90 169
Being adjustment of deferred tax due to change in options forfeited.		

---

At 31 December 2005, 300 000 options are exercised. This necessitates a further adjustment to the share options equity per ED E-124.15 since the estimated lives of such options (5 years) differ from their actual lives (3 years). It is submitted that such adjustment would be made irrespective of whether the options are vested or not. The revised total estimated value of the award is as follows:

300 000 x 10

= R3 000 000.

Therefore, the adjustment to be made is computed as follows:

Revised cumulative cost to date based on life of 3 years	3 000 000
Less: Cost recognised to date $300\,000 \times 17.15$	(5 145 000)
Adjustment to compensation expense at 31/12/2005	<u>(2 145 000)</u>

<b>E17</b> Dr. Share options equity	2 145 000
Cr. Prepaid compensation asset	2 145 000

Being adjustment to the value of options granted at 1 January 2003 to adjust for difference between the expected lives of exercised ESOs and their actual lives.

---

<b>E18</b> Dr. Deferred tax liability	$2\,145\,000 \times 30\%$	643 500
Cr. Share options account		643 500

Being adjustment of deferred tax liability after the adjustment for the value of the grant of options on 1 January 2003.

---

<b>E19</b> Dr. Prepaid compensation asset	2 145 000
Cr. Compensation expense	2 145 000

Being adjustment of compensation expense due to change in estimated life.

---

<b>E20</b> Dr. Tax expense	643 500
Cr. Deferred tax liability	643 500

Being adjustment of deferred tax due to change in estimated life.

---

<b>E21</b> Dr. Bank	$50 \times 300\,000$	15 000 000
Dr. Share options equity	$10 \times 300\,000 \times 70\%$	2 100 000
Dr. Deferred tax liability	$10 \times 300\,000 \times 30\%$	900 000
Dr. Accumulated profit (bal fig)		3 000 000
Cr. Share capital and premium	$70 \times 300\,000$	21 000 000

Being issuance of shares upon the exercise of the options. The share options account **net** of deferred tax is charged to equity.

---

<b>E22</b> Dr. Taxation liability	1 800 000	
Cr. Tax expense	$[(70-50) \times 300\,000] \times 30\%$	1 800 000

Being current tax deduction upon exercise of ESOs.

---

<b>E23</b> Dr. Tax expense		1 800 000	
Cr. Deferred tax liability	300 000 x 10 x 30%		900 000
Cr. Share capital and premium	[(70-50)-10] x 300 000 x 30%		900 000

Being writing off of deferred tax. The credit to share capital and premium is the excess of the deductible amount over the compensation expense recognised.

---

*Exercise date – 30 June 2006*

Because the estimated lives of the 330 000 ESOs differ from the actual lives, an adjustment must be made per ED E-124.15. The revised total estimated value of the award is as follows:

$$330\,000 \times 11$$

$$= R3\,630\,000.$$

Therefore, the adjustment to be made is computed as follows:

Revised cumulative cost to date based on life of 3.5 years	3 630 000
Less: Cost recognised to date 330 000 x 17.15	(5 659 500)
Adjustment to compensation expense at 30/6/2006	<u>(2 029 500)</u>

<b>E24</b> Dr. Share options equity	2 029 500	
Cr. Prepaid compensation asset		2 029 500

Being adjustment to the value of options granted at 1 January 2003 to adjust for difference between the expected lives of exercised ESOs and their actual lives.

---

<b>E25</b> Dr. Deferred tax liability	2 029 500 x 30%	608 850	
Cr. Share options equity			608 850

Being adjustment of deferred tax liability after the adjustment for the value of the grant of options on 1 January 2003.

---

<b>E26</b> Dr. Prepaid compensation asset	2 029 500	
Cr. Compensation expense		2 029 500

Being adjustment of compensation expense due to change in estimated life.

---

<b>E27</b>	Dr. Tax expense		608 850	
	Cr. Deferred tax liability			608 850
	Being adjustment of deferred tax due to change in estimated life.			
<hr/>				
<b>E28</b>	Dr. Bank	50 x 330 000	16 500 000	
	Dr. Share options equity	11 x 330 000 x 70%	2 541 000	
	Dr. Deferred tax liability	11 x 330 000 x 30%	1 089 000	
	Cr. Accumulated profit (bal fig)			1 980 000
	Cr. Share capital and premium	55 x 330 000		18 150 000
	Being issuance of shares upon the exercise of the options.			
<hr/>				
<b>E29</b>	Dr. Taxation liability		495 000	
	Cr. Tax expense	[(55-50) x 330 000] x 30%		495 000
	Being current tax deduction upon exercise of ESOs.			
<hr/>				
<b>E30</b>	Dr. Tax expense		1 089 000	
	Cr. Deferred tax liability	330 000 x 11 x 30%		1 089 000
	Being writing off of deferred tax amount. There is no entry to share capital since the compensation cost recognised is greater than the intrinsic value at exercise date.			
<hr/>				

*Expiry date – 31 December 2008*

Because the estimated lives of the final 100 000 (= 730 000 - 300 000 - 330 000) ESOs differ from the actual lives, an adjustment must be made per ED E-124.15. The revised total estimated value of the award is as follows:

$$100\,000 \times 20 = R2\,000\,000.$$

Therefore, the adjustment to be made is computed as follows:

Revised cumulative cost to date based on life of 3.5 years	2 000 000
Less: Cost recognised to date 100 000 x 17.15	(1 715 000)
Adjustment to compensation expense at 31/12/2008	<u>285 000</u>

<b>E31</b>	Dr. Prepaid compensation asset		285 000	
	Cr. Share options equity			285 000
	Being adjustment to the value of options granted at 1 January 2003 to adjust for difference between the expected lives of exercised ESOs and their actual lives.			
<hr/>				
<b>E32</b>	Dr. Share options equity	285 000 x 30%	85 500	
	Cr. Deferred tax liability			85 500
	Being adjustment of deferred tax liability after the adjustment for the value of the grant of options on 1 January 2003.			
<hr/>				
<b>E33</b>	Dr. Compensation expense		285 000	
	Cr. Prepaid compensation asset			285 000
	Being adjustment of compensation expense due to change in estimated life.			
<hr/>				
<b>E34</b>	Dr. Deferred tax liability		85 500	
	Cr. Tax expense			85 500
	Being adjustment of deferred tax due to change in estimated life.			
<hr/>				
<b>E35</b>	Dr. Share options equity	100 000 x 20 x 70%	1 400 000	
	Dr. Deferred tax liability	100 000 x 20 x 30%	600 000	
	Cr. Share capital and premium			2 000 000
	Being book entry to recognise share options as share capital and premium upon the expiry of unexercised ESOs.			
<hr/>				
<b>E36</b>	Dr. Tax expense	2 000 000 x 30%	600 000	
	Cr. Deferred tax liability			600 000
	Being reversal of deferred tax amount due to non-exercise of ESOs.			
<hr/>				

### Accounting under the G4+1 Paper

*For the year ended 31 December 2003*

The total estimated value of the award is as follows:

$$900\,000 \times (97\%)^3 \times 18$$

$$=R14\,785\,303.$$

Therefore, the compensation expense to be recognised for 2003 is R4 928 434 (= R14 785 303 ÷3). The deferred tax consequences were not specifically dealt with in the G4+1 Paper. Consequently, it is assumed that the IASB would have provided deferred tax based on the intrinsic value of the ESO up until the vesting date as illustrated below.

<b>G1</b>	Dr. Compensation expense	4 928 434	
	Cr. Share options equity		4 928 434
	Being recognition of compensation expense for 2003.		
<hr/>			
<b>G2</b>	Dr. Deferred tax liability	174 600	
	Cr. Tax expense [900 000 x 0.97 x (52-50)]/3 x 30%		174 600
	Being provision for deferred tax due to temporary difference created*.		
<hr/>			

\*Refer to pages 250-251 for the explanation of this entry.

*For the year ended 31 December 2004*

Because vesting date is used, at the end of each period until vesting date, the total value of the award must be recomputed and the compensation accrued to date adjusted accordingly. Therefore, the total value of the award at 31 December 2004 is as follows:

$$900\,000 \times (94\%)^3 \times 18.50$$

$$= R13\,829\,224.$$

The adjustment to be made is computed as follows:

Revised accrual to date	13 829 224 x 2/3	9 219 482
Less: Actual cost recognised to date		(4 928 434)
Adjustment to compensation expense at 31/12/2004		<u>4 291 048</u>

<b>G3</b>	Dr. Compensation expense	4 291 048	
	Cr. Share options equity		4 291 048
	Being recognition of compensation expense for 2004.		
<hr/>			

Deferred tax must be adjusted in a manner similar to the compensation expense.

The adjustment to be made is computed as follows:

Revised accrual to date	$[900\,000 \times 0.97 \times 0.94 \times (59-50)] \times \frac{2}{3} \times 30\%$	1 477 116
Less: Actual tax recognised to date		(174 600)
Adjustment to deferred tax at 31/12/2004		<u>1 302 516</u>

<b>G4</b> Dr. Deferred tax liability	1 302 516	
Cr. Tax expense		1 302 516
Being provision for deferred tax due to temporary difference created.		

---

*For the year ended 31 December 2005*

The total value of the award at 31 December 2005 is as follows:

730 000 x 19  
= R13 870 000.

The adjustment to be made is computed as follows:

Revised accrual to date	13 870 000
Less: Actual cost recognised to date	(9 219 482)
Adjustment to compensation expense at 31/12/2005	<u>4 650 518</u>

<b>G5</b> Dr. Compensation expense	4 650 518	
Cr. Share options equity		4 650 518
Being recognition of compensation expense for 2005.		

---

The adjustment to deferred tax to be made is computed as follows:

Revised accrual to date	$[730\,000 \times (70-50)] \times 30\%$	4 380 000
Less: Tax recognised to date		(1 477 116)
Adjustment to deferred tax at 31/12/2005		<u>2 902 884</u>

<b>G6</b> Dr. Deferred tax liability	2 902 884	
Cr. Tax expense		2 902 884
Being provision for deferred tax due to temporary difference created.		

---

Exercise of the ESOs at vesting date requires similar entries to SFAS 123:

<b>G7</b>	Dr. Bank	50 x 300 000	15 000 000
	Dr. Share options equity	19 x 300 000	5 700 000
	Dr. Accumulated profit (bal fig)		300 000
	Cr. Share capital and premium	70 x 300 000	21 000 000

Being issuance of shares upon the exercise of the options.

---

<b>G8</b>	Dr. Taxation liability		1 800 000
	Cr. Tax expense	[(70-50) x 300 000] x 30%	1 800 000

Being current tax deduction upon exercise of ESOs.

---

<b>G9</b>	Dr. Tax expense		1 800 000
	Cr. Deferred tax liability		1 800 000

Being reversal of deferred tax raised to date for exercised ESOs.

---

*Exercise date – 30 June 2006*

The adjustment to deferred tax to be made is computed as follows:

Revised accrual to date	[430 000 x (55-50)] x 30%	645 000
Less: Tax recognised to date	[430 000 x (70-50)] x 30%	(2 580 000)
Adjustment to deferred tax at 30/06/2006		<u>(1 935 000)</u>

<b>G10</b>	Dr. Tax expense		1 935 000
	Cr. Deferred tax liability		1 935 000

Being adjustment of deferred tax for the current period.

---

<b>G11</b>	Dr. Bank	50 x 330 000	16 500 000
	Dr. Share options equity	19 x 330 000	6 270 000
	Cr. Share capital and premium	55 x 330 000	18 150 000
	Cr. Accumulated profit		4 620 000

Being issuance of shares upon the exercise of the options.

---

<b>G12</b>	Dr. Taxation liability		495 000
	Cr. Tax expense	[(55-50) x 330 000] x 30%	495 000

Being current tax deduction upon exercise of ESOs.

---



<b>G13</b> Dr. Tax expense		495 000	
Cr. Deferred tax liability	330 000 x [55-50] x 30%		495 000
Being writing off of deferred tax amount.			

---

*Expiry date – 31 December 2008*

<b>G14</b> Dr. Tax expense*	100 000 x [55-50] x 30%	150 000	
Cr. Deferred tax liability			150 000
Being reversal of deferred tax amount due to non-exercise of ESOs.			

---

\*The deferred tax recognised at 30 June 2006 will eventually wind down to zero as the intrinsic value of the options decreases. Hence, the above entry will be made piecemeal from 30 June 2006 till 31 December 2008.

<b>G15</b> Dr. Share options equity	100 000 x 19	1 900 000	
Cr. Share capital and premium			1 900 000
Being book entry to recognise share options as share capital and premium upon the expiry of unexercised ESOs.			

---

## Accounting under ED 2

### ***Estimated units of service to be received***

The entity expects to receive at grant date, the following years (units) of service over the life of the options:

	<b>Years of service</b>
3 000 employees will work during 2003	3 000
3 000 x 0.97 employees will work during 2004	2 910
2 910 x 0.97 employees will work during 2005	2 823
	<u>8 733</u>

Total compensation initially expected to be *received* by the employer, is as follows:

$$900\,000 \times (97\%)^3 \times 17.15$$

$$= R14\,087\,108.$$

∴ Fair value per year (unit) of service is as follows:

$$R14\,087\,108 / 8\,733 = R1\,613 \text{ per year of service.}$$

### **Actual services received**

The number of options outstanding each period were as follows:

1/1/2003		900 000
31/12/2003	(900 000 x 0.97)	873 000
31/12/2004	(873 000 x 0.94)	820 620
31/12/2005		730 000

Because actual forfeitures occur at the end of the year and each employee was granted 300 options, the following years of service were received:

2003 year	(900 000/300)	3 000
2004 year	(873 000/300)	2 910
2005 year	(820 600/300)	2 735

*For the year ended 31 December 2003*

<b>I1</b>	Dr. Compensation expense	1 613 x 3000 years	4 839 000
	Cr. Share options equity		4 839 000
	Being receipt of services from employees.		

---

<b>I2</b>	Dr. Deferred tax liability		174 600
	Cr. Tax expense	[900 000 x 0.97 x (52-50)]/3 x 30%	174 600
	Being provision for deferred tax due to temporary difference created.		

---

Deferred tax is provided identically to that of the G4+1 Paper. Note that ED 2 (para. E5) states that because the tax base of the employee services received is based on the intrinsic value of the options, and those options were granted for three years' services, but only one year's services have been received to date, it is necessary to multiply the option's intrinsic value by one-third to arrive at the tax base of the employee services

received in year 1. The same applies for the other years until vesting date. According to ED 2 (para. E6) deferred tax should be based on *actual* outstanding options at the relevant reporting period and not on *estimates* of forfeitures.

*For the year ended 31 December 2004*

<b>13</b>	Dr. Compensation expense	1 613 x 2910 years	4 693 830
	Cr. Share options equity		4 693 830
	Being recognition of compensation expense for 2004.		
<hr/>			
<b>14</b>	Dr. Deferred tax liability		1 302 516
	Cr. Tax expense		1 302 516
	Being provision for deferred tax due to temporary difference created – same as G4 on page 247.		
<hr/>			

*For the year ended 31 December 2005*

<b>15</b>	Dr. Compensation expense	1 613 x 2735 years	4 411 555
	Cr. Share options account		4 411 555
	Being recognition of compensation expense for 2005.		
<hr/>			
<b>16</b>	Dr. Deferred tax liability		2 902 884
	Cr. Tax expense		2 902 884
	Being provision for deferred tax due to temporary difference - same as G6 on page 247.		
<hr/>			

The total value of the share options equity account is R13 944 385 at 31 December 2005. This account consists of services rendered for 730 000 options. Because 300 000 options have been exercised, R5 730 569 (= 300 000/730 000 x R13 944 385) of the share options equity account must be utilised when the ESOs are exercised. Thus, the following entry is made at exercise:

<b>17</b>	Dr. Bank	50 x 300 000	15 000 000
	Dr. Share options equity		5 730 569
	Dr. Accumulated profit (bal fig)		269 431
	Cr. Share capital and premium	70 x 300 000	21 000 000

Being issuance of shares upon the exercise of the options.

---

<b>I8</b>	Dr. Taxation liability	1 800 000	
	Cr. Tax expense	$[(70-50) \times 300\,000] \times 30\%$	1 800 000

Being current tax deduction upon exercise of ESOs.

---

<b>I9</b>	Dr. Tax expense	1 800 000	
	Cr. Deferred tax liability		1 800 000

Being reversal of deferred tax raised to date for exercised ESOs.

*Exercise date – 30 June 2006*

<b>I10</b>	Dr. Tax expense	1 935 000	
	Cr. Deferred tax liability		1 935 000

Being adjustment of deferred tax for the current period-same entry as G10 on page 248.

---

<b>I11</b>	Dr. Bank	50 x 330 000	16 500 000
	Dr. Share options equity	$330 / 730 \times 13\,944\,385$	6 303 626
	Cr. Share capital and premium	55 x 330 000	18 150 000
	Cr. Accumulated profit		4 653 626

Being issuance of shares upon the exercise of the options.

---

<b>I12</b>	Dr. Taxation liability	495 000	
	Cr. Tax expense	$[(55-50) \times 330\,000] \times 30\%$	495 000

Being current tax deduction upon exercise of ESOs.

---

<b>I13</b>	Dr. Tax expense	495 000	
	Cr. Deferred tax liability	$330\,000 \times [55-50] \times 30\%$	495 000

Being writing off of deferred tax amount on exercise of ESOs.

*Expiry date – 31 December 2008*

---

<b>I14</b>	Dr. Tax expense*	$100\,000 \times [55-50] \times 30\%$	150 000
	Cr. Deferred tax liability		150 000

Being reversal of deferred tax amount due to non-exercise of ESOs.

\* The deferred tax recognised at 30 June 2006 will eventually wind down to zero. Hence, the above entry will be made piecemeal from 30 June 2006 till 31 December 2008.

<b>I15</b>	Dr. Share options equity	$100 / 730 \times 13\,944\,385$	1 910 190
	Cr. Share capital and premium		1 910 190
	Being book entry to recognise share options as share capital and premium upon the expiry of unexercised ESOs.		

---

### **Accounting under exercise date accounting suggested by Kirschenheiter, Mathur, and Thomas (2003)**

The entries from 1 January 2003 till 31 December 2005 (i.e. K1-K4) are identical to G1-G4 on pages 246-247 of the G4+1 Paper except that a share options *liability* account is raised instead of a share options *equity* account. It must be noted that these authors do not specifically state that the fair value of the ESO must be determined using an option-pricing model. Although the writer attempted to contact these authors directly regarding this issue, the authors did not respond. It is therefore assumed that they would apply an option-pricing model similar to SFAS 123 and would accrue deferred tax identically to ED 2. A model similar to Appendix C of ED 2, which deals with the accounting for share appreciation rights (SARs), is applied with the exception that the units of service method is not used.

*For the year ended 31 December 2003*

<b>K1</b>	Dr. Compensation expense		4 928 434
	Cr. Share options liability		4 928 434
	Being recognition of compensation expense for 2003 - same as G1 on page 246.		
<b>K2</b>	Dr. Deferred tax liability		174 600
	Cr. Tax expense $[900\,000 \times (0.97) \times (52-50)]/3 \times 30\%$		174 600
	Being provision for deferred tax due to temporary difference created - same as G2 on page 246.		

---

*For the year ended 31 December 2004*

<b>K3</b>	Dr. Compensation expense	4 291 048	
	Cr. Share options liability		4 291 048
	Being recognition of compensation expense for 2004 - same as G3 on page 246.		
<hr/>			
<b>K4</b>	Dr. Deferred tax liability	1 302 516	
	Cr. Tax expense		1 302 516
	Being provision for deferred tax due to temporary difference created - same as G4 on page 247.		
<hr/>			

*For the year ended 31 December 2005*

Journals K5-K6 are identical to G5-G6 of the G4+1 Paper on page 247.

<b>K5</b>	Dr. Compensation expense	4 650 518	
	Cr. Share options liability		4 650 518
	Being recognition of compensation expense for 2005.		
<hr/>			
<b>K6</b>	Dr. Deferred tax liability	2 902 884	
	Cr. Tax expense		2 902 884
	Being provision for deferred tax due to temporary difference created.		
<hr/>			
<b>K7</b>	Dr. Share options liability	19 x 300 000	5 700 000
	Dr. Compensation expense	(70-50-19) x 300 000	300 000
	Cr. Bank	(70-50) x 300 000	6 000 000
	Being settlement of portion of share options liability exercised and balancing figure charged as compensation expense.		
<hr/>			
<b>K8</b>	Dr. Taxation liability*	1 800 000	
	Cr. Deferred tax liability	[(70-50) x 300 000] x 30%	1 800 000
	Being reversal of deferred tax amount and provision for current tax receivable.		
<hr/>			

\* The tax deduction received from the Revenue Authorities will be disclosed on the cash flow statement as an amount reducing the tax paid in cash. This entry is a combination of G8-G9 on page 248.

<b>K9</b> Dr. Bank	70 x 300 000	21 000 000
	Cr. Share capital and premium	21 000 000
Being recognition of fair value of shares issued at exercise date.		

---

*Exercise date – 30 June 2006*

The remaining ESOs must be marked-to-market at every reporting date and before exercise thereof. Therefore, the following adjustment must be made to the value of unexercised vested ESOs:

Fair value at 30 June 2006	430 000 x 15	6 450 000
Less: Fair value recognised to date	430 000 x 19	(8 170 000)
Adjustment to compensation expense at 30/06/2006		<u>(1 720 000)</u>

<b>K10</b> Dr. Share options liability		1 720 000
	Cr. Compensation expense	1 720 000
Being remeasurement of liability to its fair value at 30 June 2006.		

---

Deferred taxation must also be adjusted to reflect the intrinsic value at this date. The adjustment is computed exactly as G10 of the G4+1 Paper on page 248.

<b>K11</b> Dr. Tax expense		1 935 000
	Cr. Deferred tax liability	1 935 000
Being marking to market of deferred tax amount before exercise.		

---

Thereafter, the following entries must be made when the share options are exercised:

<b>K12</b> Dr. Share options liability	15 x 330 000	4 950 000
	Cr. Compensation expense	(55-50-15) x 330 000
	Cr. Bank	(55-50) x 330 000
Being settlement of portion of share options liability exercised and balancing figure credited to compensation expense.		

---

<b>K13</b> Dr. Taxation liability		495 000
	Cr. Deferred tax liability	[(55-50) x 330 000] x 30%
Being reversal of deferred tax amount and provision for current tax receivable.		

---

<b>K14</b> Dr. Bank	55 x 330 000	18 150 000
Cr. Share capital and premium		18 150 000
Being recognition of fair value of shares issued at exercise date.		

---

*1 July 2006 till 31 December 2008*

During each period until the expiry date, the outstanding options will be remeasured to their fair value. At expiry date, they will be reversed out. Over this period, the following entries will eventually be made in aggregate:

<b>K15</b> Dr. Share options liability	100 000 x 15	1 500 000
Cr. Compensation expense		1 500 000
Being reversal out of unexercised ESOs at expiry date.		

---

<b>K16</b> Dr. Tax expense	100 000 x [55-50] x 30%	150 000
Cr. Deferred tax liability		150 000
Being reversal of deferred tax amount due to non-exercise of ESOs.		

---

### **Accounting under exercise date accounting suggested by Balsam (1994)**

This approach is similar to that of Kirschenheiter, Mathur, and Thomas (2003) except that *intrinsic value* is used rather than *fair value* and forfeitures are accounted for as and when they occur. Balsam (1994) did not specifically allow the allowed alternative per SFAS 123 (para. 28) of estimating a forfeiture rate at grant date. The writer attempted to contact this author directly regarding this issue, yet he failed to respond to the e-mail. It is therefore assumed that he would not allow a forfeiture rate to be calculated at grant date and would instead recognise forfeitures as and when they occur. It is also assumed that deferred tax is provided identically to ED 2.

*For the year ended 31 December 2003*

<b>B1</b> Dr. Compensation expense		582 000
Cr. Share options liability	900 000 x 0.97x (52-50)]/3	582 000
Being recognition of compensation expense for 2003.		

---



<b>B2</b> Dr. Deferred tax liability	174 600	
Cr. Tax expense 582 000 x 30% (same as I2 on page 250)		174 600
Being provision for deferred tax due to temporary difference created.		

---

*For the year ended 31 December 2004*

The total intrinsic value of the award at 31 December 2004 is as follows:

$$900\,000 \times 97\% \times 94\% \times [59-50]$$

$$= R7\,385\,580.$$

The adjustment to be made is computed as follows:

Intrinsic value at 31/12/2004 7 385 580 x 2/3	4 923 720
Less: Intrinsic value recognised to date	(582 000)
Adjustment to compensation expense at 30/06/2006	<u>4 341 720</u>

<b>B3</b> Dr. Compensation expense	4 341 720	
Cr. Share options liability		4 341 720
Being recognition of compensation expense for 2004.		

---

<b>B4</b> Dr. Deferred tax liability	1 302 516	
Cr. Tax expense 4 341 720 x 30%		1 302 516
Being provision for deferred tax due to temporary difference created.		

---

*For the year ended 31 December 2005*

The total intrinsic value of the award at 31 December 2005 is as follows:

$$730\,000 \times [70-50]$$

$$= R14\,600\,000.$$

The adjustment to be made is computed as follows:

Intrinsic value at 31 December 2005	14 600 000
Less: Cost recognised till 31 December 2004	(4 923 720)
Adjustment to compensation expense at 31/12/2005	<u>9 676 280</u>

<b>B5</b> Dr. Compensation expense	9 676 280	
Cr. Share options liability		9 676 280
Being recognition of compensation expense for 2005.		

---

<b>B6</b> Dr. Deferred tax liability	2 902 884	
Cr. Tax expense 9 676 280 x 30%		2 902 884
Being provision for deferred tax due to temporary difference created.		

---

The entries upon the exercise of the ESOs is as follows:

<b>B7</b> Dr. Bank	50 x 300 000	15 000 000
Dr. Share options liability	[70-50] x 300 000	6 000 000
Cr. Share capital and premium	70 x 300 000	21 000 000
Being issuance of shares upon the exercise of the options.		

---

<b>B8</b> Dr. Taxation liability	1 800 000	
Cr. Tax expense [(70-50) x 300 000] x 30%		1 800 000
Being current tax deduction upon exercise of ESOs.		

---

<b>B9</b> Dr. Tax expense	1 800 000	
Cr. Deferred tax liability		1 800 000
Being reversal of deferred tax raised to date for exercised ESOs.		

---

*Exercise date – 30 June 2006*

The remaining ESOs must be remeasured to intrinsic value at every reporting date and before exercise thereof. Therefore, the following adjustment must be made to the value of unexercised vested ESOs:

Intrinsic value at 30 June 2006	430 000 x [55-50]	2 150 000
Less: Intrinsic value recognised to date	430 000 x [70-50]	(8 600 000)
Adjustment to compensation expense at 30/06/2006		<u>(6 450 000)</u>

<b>B10</b> Dr. Share options liability	6 450 000	
Cr. Compensation expense		6 450 000
Being remeasuring liability to its intrinsic value at 30 June 2006.		

---

<b>B11</b> Dr. Tax expense	6 450 000 x 30%	1 935 000
Cr. Deferred tax liability		1 935 000

Being marking to market of deferred tax amount before exercise.

---

<b>B12</b> Dr. Bank	50 x 330 000	16 500 000
Dr. Share options liability	[55-50] x 330 000	1 650 000
Cr. Share capital and premium	55 x 330 000	18 150 000

Being issuance of shares upon the exercise of the options.

---

<b>B13</b> Dr. Taxation liability		495 000
Cr. Tax expense	[(55-50) x 330 000] x 30%	495 000

Being tax deduction upon exercise of ESOs.

---

<b>B14</b> Dr. Tax expense		495 000
Cr. Deferred tax liability	330 000 x [55-50] x 30%	495 000

Being writing off of deferred tax amount.

---

*1 July 2006 till 31 December 2008*

Each period until the expiry date, the outstanding options will be remeasured to their intrinsic value. At expiry date, they will be reversed out. Over this period, the following entries will eventually be made:

<b>B15</b> Dr. Share options liability	100 000 x [55-50]	500 000
Cr. Compensation expense		500 000

Being reversal out of unexercised ESOs at expiry date.

---

<b>B16</b> Dr. Tax expense	100 000 x [55-50] x 30%	150 000
Cr. Deferred tax liability		150 000

Being reversal of deferred tax amount due to non-exercise of ESOs.

---

## APPENDIX B – ILLUSTRATIVE EXAMPLE OF THE SPLIT BETWEEN THE LIABILITY AND EQUITY COMPONENTS OF A TANDEM AWARD

XYZ Ltd grants to its chief executive officer (CEO) an immediately vested award consisting of two parts, namely:

- 1 000 phantom share units (units) the value of which is always equal to the value of 1 000 ordinary shares of XYZ Ltd.
- Share options on 3 000 ordinary shares of XYZ Ltd share with an exercise price of R50 per share.

At the grant date, XYZ Ltd's share price is R50 per ordinary share. The CEO may choose whether to exercise the options or to cash in the units at any time during the next five years. Exercise of all of the options cancels all of the units, and cashing in all of the units cancels all of the options. The cash value of the units will be paid to the CEO at the end of five years if the option component of the tandem award is not exercised before then. Assume that the expected volatility of a XYZ Ltd share is assumed to be 30%, the risk-free interest rate is 7% and a XYZ Ltd share pays no dividends.

(Adapted from SFAS 123 (paras. 339-347))

### Split between liability and equity components

With a 3-to-1 ratio of options to units, the exercise of three options will produce a higher gain than receipt of cash equal to the value of one ordinary share if the share price appreciates from the grant date by more than 50%. Below that point, one unit is more valuable than the gain on three options. To illustrate that relationship, the results if the share price increases 50% to R75 are:

	<b>Units</b>	<b>Exercise of Options</b>
Market value	R75 000 (R75 X 1 000)	R225 000 (R75 X 3 000)
Purchase price	<u>      (0)</u>	<u>(150 000)</u> (R50 X 3 000)
Net cash value	<u>R75 000</u>	<u>R 75 000</u>

If the price of a XYZ Ltd ordinary share increases from R50 to R75, each part of the tandem grant will produce the same net cash inflow (ignoring transaction costs) to the CEO. If the price increases only to R74, the value of one unit of phantom shares

(i.e. R74) exceeds the gain on exercising three options, which would be R72 [3 x (R74 - R50)]. But if the price increases to R76, the gain on exercising three options, R78 [3 x (R76 - R50)], exceeds the value of one unit of phantom shares (i.e. R76).

At the grant date, the CEO could take R50 000 cash for the units and forfeit the options. Therefore, the total value of the award at the grant date must exceed R50 000 because at share prices above R75, the CEO receives a higher amount than would the holder of one unit of phantom shares. To exercise the 3 000 options, the CEO must forfeit the equivalent of 1 000 units of phantom shares, in addition to paying the total exercise price of R150 000 (3 000 x R50). In effect, the CEO receives only 2 000 ordinary shares of XYZ Ltd upon exercise of the options. That is the equivalent of the option component of the tandem award consisting of options to purchase 2 000 ordinary shares for R75 per share.

Thus, in measuring compensation cost, the award may be thought of as a *combination* – not tandem – grant of (a) 1 000 units with a value at grant of R50 000 and (b) 2 000 options with an exercise price of R75 per share. Using the assumptions in the illustration, the fair value of an option with an exercise price of R75 is R12.13 using the Black-Scholes model when the price of XYZ Ltd's share price is R50. Therefore, the total value of the award at the grant date is:

Units (1 000 x R50)	R50 000
Options (2 000 x R12.13)	<u>24 260</u>
Value of award	<u>R74 260</u>

Compensation cost recognised at the date of grant (the award is immediately vested) therefore would be R74 260. That amount is more than either of the components by itself, but less than the total cost that would be computed if both components (1 000 units and 3 000 options with an exercise price of R50) were exercisable. The phantom units component is recognised as a *liability* per SFAS 123 and the options component is recognised as *equity*. Consequently, changes in the value of the liability that result from increases or decreases in the price of XYZ Ltd's share price would be recognised each period until exercise date, except that the amount of the liability would not exceed R75 000.

## APPENDIX C – ILLUSTRATIVE EXAMPLE OF AN ESO WITH A RELOAD FEATURE USING SFAS 123

XYZ Ltd is a public company listed on the JSE Securities Exchange and has a year-end of 31 December. On 1 January 2003, the company granted an equal amount of share options to each of its 3 000 employees.

All the options vest at the end of three years (cliff vesting). The following table shows the assumptions and information about the options granted:

Number of options granted	900 000
Expected forfeitures per annum	3% of the remaining options granted after forfeiture at the end of the previous year
Exercise price	R50
Option term	6 years
Weighted average expected life	5 years
Vesting period and service period	3 years

The option plan includes a single reload feature in terms of which an employee receives a reload option for each share tendered to settle the exercise price at exercise date. The exercise price of the reload option is equal to the market price of the underlying shares at the exercise date and the option's term is equal to the remainder of the term of the original options.

The following table provides the share prices and fair values per option at the relevant dates:

Date	Share price of XYZ Ltd	Fair value per option of original grant <b>exclusive</b> of the reload feature	Fair value per option of original option grant <b>inclusive</b> of reload feature	Fair value of the reload option
1/1/2003	50	17.15	20.15	-
31/12/2005	70	19	22	4

The above fair values have been computed using an option-pricing model before adjusting for the possibility of forfeiture due to failure of the employee to complete the

required three-year period of service. The company estimates at grant date the number of options that will vest and subsequently adjusts the compensation cost for changes in the assumed rate of forfeitures and differences between expectations and actual experience. The company uses the options' estimated life in arriving at the fair value per option.

The forfeiture rate for the reload options was also 3% per annum. You may assume that forfeitures occur at the end of the relevant year and that the actual forfeitures between 2003 and 2005 were equal to the estimated forfeitures for those years.

On the 31 December 2005, all the outstanding option holders exercised their options, paid the exercise price with already owned company shares and received one reload option for each share tendered in terms of the option plan. Assume that all the reload options vested immediately.

None of the compensation cost is capitalised as part of the cost to produce inventory or other assets. Ignore tax and the split between share capital and share premium for the purposes of this illustration.

(Adapted from SFAS 123 (para. 34))

### **Accounting under SFAS 123 assuming the reload feature is not included in the fair value of the ESOs**

The total estimated value of the award is as follows:

$$900\,000 \times (97\%)^3 \times 17.15 \\ = R14\,087\,108.$$

Therefore, the compensation expense to be recognised during each year of the three year period (assuming there were no changes in the forfeiture rate estimate) is R4 695 703 (= R14 087 108 ÷ 3)

<b>J1</b>	Dr. Compensation expense	4 695 703
	Cr. Share options equity	4 695 703
	Being recognition of compensation expense for 2003.	

---

<b>J2</b>	Dr. Compensation expense	4 695 703	
	Cr. Share options equity		4 695 703
	Being recognition of compensation expense for 2004.		

---

<b>J3</b>	Dr. Compensation expense	4 695 703	
	Cr. Share options equity		4 695 703
	Being recognition of compensation expense for 2005.		

---

The number of options which actually vested at 31 December 2005 are as follows:

$$900\,000 \times (97\%)^3 = 821\,406 \text{ options.}$$

The total exercise price payable by the employees is R41 070 300 (= 821 406 x R50). This will result in 586 719 shares (R4 1070 300/ R70 per share) being surrendered to the company by the employees in payment of the exercise price. The net increase in the company's share capital and premium will be 234 687 shares (821 406 – 586 719).

<b>J4</b>	Dr. Share options equity	14 087 108	
	Dr. Accumulated profit (bal fig)	2 340 982	
	Cr. Share capital and premium	234 687 x 70	16 428 090
	Being exercise of ESOs with company's shares.		

---

The number of options issued was 586 719 with an exercise price of R70 and a fair value of R4 per option. The total estimated value of the award is as follows:

$$586\,719 \times 4 \\ = R2\,346\,876.$$

Therefore, the additional compensation expense to be recognised is R2 346 876, because the reload options vested immediately. Such amount remains in equity until the ESOs are exercised or forfeited.

<b>J5</b>	Dr. Compensation expense	2 346 876	
	Cr. Share options equity		2 346 876
	Being recognition of additional compensation expense.		

---



### Accounting under SFAS 123 assuming the reload feature is included in the fair value of the ESOs

The total estimated value of the award is as follows:

$$900\,000 \times (97\%)^3 \times 20.15$$

$$= R16\,551\,325.$$

Therefore, the compensation expense to be recognised during each year of the three year period (assuming there were no changes in the forfeiture rate estimate) is R5 517 108 (R16 551 325 ÷ 3).

<b>J1</b>	Dr. Compensation expense	5 517 108	
	Cr. Share options equity		5 517 108
	Being recognition of compensation expense for 2003.		
<hr/>			
<b>J2</b>	Dr. Compensation expense	5 517 108	
	Cr. Share options equity		5 517 108
	Being recognition of compensation expense for 2004.		
<hr/>			
<b>J3</b>	Dr. Compensation expense	5 517 108	
	Cr. Share options equity		5 517 108
	Being recognition of compensation expense for 2005.		
<hr/>			

As above, 586 719 shares (R41070 300/ R70 per share) are surrendered to the company by the employees in payment of the exercise price at 31 December 2005. This results in an increase in the company's share capital and premium of 234 687 shares (= 821 406 – 586 719).

<b>J4</b>	Dr. Share options equity	5 517 108 x 3	16 551 324	
	Cr. Accumulated profit (bal fig)			123 234
	Cr. Share capital and premium	234 687 x 70		16 428 090
	Being exercise of ESOs with company's shares.			
<hr/>				

No additional compensation expense is recognised because the reload options expense has already been incorporated into the valuation of the ESOs at grant date.

## APPENDIX D – ILLUSTRATIVE EXAMPLE OF THE REPRICING OF AN ESO USING ED 2

XYZ Ltd is a public company listed on the JSE Securities Exchange and has a year-end of 31 December. On 1 January 2003, the company granted an equal amount of share options to each of its 3 000 employees.

All the options vest at the end of three years (cliff vesting). The following table shows the assumptions and information about the options granted:

Number of options granted	900 000
Expected forfeitures per annum	3% of the remaining options granted after forfeiture at the end of the previous year
Exercise price	R50
Option term	6 years
Weighted average expected life	5 years
Vesting period and service period	3 years

The fair value per option at grant date amounted to R17.15 per option when the company's share price was R50. However, due to a dramatic collapse in the company's share price, the company reduced the exercise price of all the outstanding ESOs to R40 at 31 December 2004. The three year cliff vesting requirement did not change. The fair value of a similar option at 31 December 2004 with an exercise price of R40 and a three year expected life was R10.82 per option. The fair value of the original options at 31 December 2004 immediately before their terms were modified was R5.54 per option.

The above fair values have been computed using an option-pricing model before adjusting for the possibility of forfeiture due to failure of the employee to complete the required three-year period of service. The company estimates at grant date the number of options that will vest and subsequently adjusts the compensation cost for changes in the assumed rate of forfeitures and differences between expectations and actual experience. The company uses the options' estimated life in arriving at the fair value per option.

You may assume that forfeitures occur at the end of the relevant year and that the actual forfeitures between 2003 and 2005 were equal to the estimated forfeitures for those years.

None of the compensation cost is capitalised as part of the cost to produce inventory or other assets. Ignore tax and the split between share capital and share premium for the purposes of this illustration.

(Adapted from ED 2 (paras. 26-30))

### Accounting consequences under ED 2 until 31 December 2005

The entity expects to receive at grant date, the following years (units) of service over the life of the options:

	<b>Years of service</b>
3 000 employees will work during 2003	3 000
3 000 x 0.97 employees will work during 2004	2 910
2 910 x 0.97 employees will work during 2005	2 823
	<u>8 733</u>

Total compensation to be *received* by the employer is as follows:

$$900\,000 \times (97\%)^3 \times 17.15$$

$$= R14\,087\,108.$$

∴ Fair value per year (unit) of service is as follows:

$$R14\,087\,108 / 8\,733 = R1\,613 \text{ per year of service.}$$

Because actual and estimated forfeitures equal one another, the units of services estimated to be received equal the units of services expected to be received.

<b>11</b>	Dr. Compensation expense	1 613 x 3000 years	4 839 000
	Cr. Share options equity		4 839 000

Being receipt of services from employees for 2003.

<b>12</b>	Dr. Compensation expense	1 613 x 2910 years	4 693 830
	Cr. Share options equity		4 693 830
	Being receipt of services from employees for 2004.		

---

At 31 December 2004, a repricing occurs. Effectively, this means that a new option grant is issued at this date. The incremental value per option is R5.28 (= R10.82-R5.54). Therefore, total compensation to be *received* by the employer in respect of the new option grant is as follows:

$$900\,000 \times (97\%)^3 \times 5.28$$

$$= R4\,337\,022.$$

∴ Fair value per year (unit) of service is as follows:

$$R4\,337\,022 / 2823 = R1\,536 \text{ per year of service.}$$

Therefore, the following entries are made in 2005.

<b>13</b>	Dr. Compensation expense	1 613 x 2823 years	4 553 499
	Cr. Share options equity		4 553 499
	Being receipt of services from employees for 2005 in respect of the original option grant.		

---

<b>14</b>	Dr. Compensation expense	1 536 x 2823 years	4 337 022
	Cr. Share options equity		4 337 022
	Being receipt of services from employees in respect of repricing option grant.		

---

## GLOSSARY OF TECHNICAL TERMS NOT EXPLAINED IN THE BODY OF THE TEXT

The following is a glossary of terms that have not been explained in the body of the dissertation due to their technical nature because it was felt that explaining them in the text itself would detract from the focus of the study:

**Brownian motion:** A mathematics concept investigated by Robert Brown in 1827 and mathematically formulated by Albert Einstein. In very simple terms, the formula allows one to study the future behaviour of share prices based on their present state and not based on their past history. (Queens University of Belfast, [S.a.]:50-51.)

**Executory contract:** A contract that remains wholly unperformed by both parties or for which there remains something still to be done by both parties to the contract (Garner, 1995, s.v. 'executory contract'). From an accounting perspective, no recognition is given to transactions under executory contracts, unless one of the parties has performed in terms of the contract (Vorster, Koen, Koornhof, Oberholster & Koppeschaar, 2002:650).

**Opportunity cost:** The value to the decision maker of the best alternative that could have been chosen but was not chosen. Opportunity costs are implicit costs which are not necessarily monetary payments but are to be computed in order to compute the economic cost of a venture or product. (Mohr & Fourie, 1995:13, 304 & 306.)

**Zero-cost collar:** An investor can protect his underlying share portfolio by creating a *collar*. A collar involves buying a put option on the shares and simultaneously selling a call option. The put option creates a floor under the current share price and the call option creates a cap over the current share price. A *zero-cost collar* (or a cashless collar) is a strategy used for an investor who believes the underlying share price will continue to gain in value. To hedge against any potential fall in the share price, he purchases a put option. He then writes a call option with a similar option term to the put option and a strike price set to generate enough cash from the option premium received from the call in order to pay for the option premium paid for put. This results in him having zero cash outflow to purchase the collar. For example, an investor owns shares currently trading at R100 per share and is fairly confident that the share price will rise in the future. To protect against any potential fall in the share price, the investor can purchase a put option with a strike price of R95 per share. At the same time he can write a call option with a strike price of R110 per share – the maximum he believes the share price will rise

to. As illustrated below, the investor is well protected whether the share price falls below R100 per share or rises above R100 per share:

- If the share price falls below R95 per share at expiration, the holder of the call option will not exercise his option and the investor can either make a gain by exercising his put option or keeping the shares and selling the put option prior to expiration thereof. The investor will not have lost money due to the option premium paid on the put option since it is offset by the option premium received by writing the call option. Therefore, the total downside risk is R5.00 per share assuming a pure zero-cost collar.
- If the share price rises above R110 per share at expiration, the call option holder will exercise his option and the investor will not exercise his put option. The investor will be forced to sell his shares at R110 per share and thereby limits the upside potential of the gain in the share price since the maximum he will gain is R10 per share. The investor also makes no loss by paying the option premium since it is set-off by the option premium received.
- If the share price is trading between R95 and R110 at expiration, both the put and call options will be underwater and will expire worthless. The investor will keep the shares and during the period, he will have retained ownership of the shares, with the ability to vote and to receive dividends, if either applied. Once again, the investor makes no loss on payment of the option premium.

(Gordon & Lyman, [S.a.]; Jansen Galvin Group, 2003.)

## BIBLIOGRAPHY

1. Aboody, D. 1996. *Market valuation of employee stock options*, Journal of Accounting and Economics, July 1996, Vol. 22, No. 1-3, pp. 357-391.
2. Aboody, D., Barth, M.E. & Kasznik, R. 2001. *SFAS 123 Stock-based compensation expense and equity market values*, Unpublished research paper, Stanford University Graduate School of Business, July 2001, [On-line], Available: <http://gobi.stanford.edu/ResearchPapers/Library/RP1694.pdf> [accessed: 02/04/2003].
3. AccountancyAge.com. 2002. *HSBC could move to clarify share options*, 6 August 2002, [On-line], Available: <http://www.financialdirector.vnu.co.uk/News/1130224> [accessed: 27/03/2003].
4. Accounting Principles Board (APB). 1972. *Opinion No. 25 (APB 25) – Accounting for stock issued to employees*, Issued October 1972 and revised October 1995. Norwalk, Connecticut: APB.
5. Accounting Standards Board (ASB). 1998. *Financial Reporting Standard No. 14 (FRS 14) – Earnings per share*, Issued October 1998 and revised December 1999. London: ASB.
6. Accounting Standards Board (ASB). 2002. *Share-based payment*, [On-line], Available: <http://www.asb.org.uk/publications/publicationproject.cfm?upid=143> [accessed: 16/05/2003].
7. Acharya, V.V., John, K. & Sundaram, R.K. 2000. *On the optimality of resetting executive stock options*, Journal of Financial Economics, July 2000, Vol. 57, No. 1, pp. 65-101.
8. American Institute of Certified Public Accountants (AICPA). 1953. *Accounting Research Bulletin No. 43 (ARB 43) – Restatement and revision of accounting research bulletins*, Issued June 1953. New York: AICPA.
9. Anderson, M. 2002. *The options debate*, National Post Business Magazine, 1 November 2002, [On-line], Available: <http://www.fei.org/canada/positionpapers/TheOptionsDebate.pdf#xml=http://fei.org.m>

[aster.com/tehis/master/search/mysite.txt?q=Expensing+stock+options&order=r&id=28d968fa649514bc&cmd=xml](http://aster.com/tehis/master/search/mysite.txt?q=Expensing+stock+options&order=r&id=28d968fa649514bc&cmd=xml) [accessed: 21/05/2003].

10. Baker, D. 2000. *The costs of the stock market bubble*, Center for Economic and Policy Research (CEPR), 27 November 2000, [On-line], Available: [http://www.cepr.net/stock\\_market\\_bubble.htm](http://www.cepr.net/stock_market_bubble.htm) [accessed: 16/06/2003].
11. Balsam, S. 1994. *Extending the method of accounting for stock appreciation rights to employee stock options*, Accounting Horizons, December 1994, Vol. 8, No. 4, pp. 52-60.
12. Balsam, S., Mozes, H.A. & Newman, H.A. 2003. *Managing pro forma stock option expense under SFAS No. 123*, Accounting Horizons, March 2003, Vol. 17, No. 1, pp. 31-45.
13. Barth, M.E., Clinch, G. & Shibano, T. 2002. *Market effects of recognition and disclosure*, Unpublished research paper, Stanford University Graduate School of Business, September 2002.
14. Bate, S. & Buckley, E. 2002. *Accounting for employee share schemes: A practical guide*, Deloitte Touche Thomatsu, [On-line], Available: <http://www.iasplus.com/dttpubs/shareuk.pdf> [accessed: 21/04/2003].
15. BCS Partnership. 2002. *Employee share schemes*, 5 October 2002, [On-line], Available: <http://www.bcspart.co.uk/shares.htm> [accessed: 21/04/2003].
16. Beck, P.J. & Zorn, T.S. 1982. *Managerial incentives in a stock-market economy*, Journal of Finance, December 1982, Vol. 37, No. 5, pp. 1151-1167.
17. Benninga, S. & Wiener, Z. 1997. *The binomial option-pricing model*, Mathematica in Education, 1997, Vol. 6, No. 3. [On-line], Available: <http://finance.wharton.upenn.edu/~benninga/mma/MiER63.pdf> [accessed: 01/04/2003].
18. Benninga, S. [S.a.]. *Binomial option-pricing model*, [On-line], Available: <http://hkkk.fi/~vaihekos/pdf/L10.pdf> [accessed: 31/03/2003].



19. Berle, A.A. & Means, G.C. 1932. *The modern corporation and private property*, July 1932. New York: The Macmillan Company.
20. Berton, L. 1992. *Business chiefs try to derail proposal on stock options*, Wall Street Journal, 5 February 1992, p. A2.
21. Berton, L. 1994. *Some companies already consider new stock plans*, Wall Street Journal, 7 March 1994, Vol. 223, No. 45.
22. Black, F. & Scholes, M. 1973. *The pricing of options and corporate liabilities*, Journal of Political Economy, May-June 1973, Vol. 81, No. 3, pp. 637-654.
23. Bodie, Z., Kaplan, R.S. & Merton, R.C. 2003. *For the last time: Stock options are an expense*, Harvard Business Review, March 2003, Vol. 81, No. 2, pp. 62-71.
24. Boness, A.J. 1964. *Elements of a theory of stock-option value*, Journal of Political Economy, April 1964, Vol. 72, No. 2, pp. 163-175.
25. Border, D. 2002. *Enron highlights stock option tricks to have it all*, Staugustine.com, 21 April 2002, [On-line], Available [http://www.staugustine.com/stories/042102/opi\\_657210.shtml](http://www.staugustine.com/stories/042102/opi_657210.shtml) [accessed 30/03/2003].
26. Botosan, C.A. & Plumlee, M.A. 2001. *Stock option expense: The sword of Damocles revealed*, Accounting Horizons, December 2001, Vol. 15, No. 4, pp. 311-327.
27. Boudreaux, K.J. & Zeff, S.A. 1976. *A note on the measure of compensation implicit in employee stock options*, Journal of Accounting Research, Spring 1976, Vol. 14, No. 1, pp. 158-162.
28. Brenner, M. & Subrahmanyam, M.G. 1994. *A simple approach to option valuation and hedging in the Black-Scholes model*, Financial Analysts Journal, March-April 1994, Vol. 50, No. 2, pp. 25-28.
29. Brenner, M., Sundaram, R.K. & Yermack, D. 2000. *Altering the terms of executive stock options*, Journal of Financial Economics, July 2000, Vol. 57, No. 1, pp. 103-128.
30. Brickley, J.A., Bhagat, S. & Lease, R.C. 1985. *The impact of long-range managerial compensation plans and shareholder wealth*, Journal of Accounting and Economics, [www.manaraa.com](http://www.manaraa.com)

Vol. 7, No. 1-3, pp. 115-129.

31. Brown, V. & Katsanis, M. 2002. *Stock options presentation to ASWA*, Chaffe & Associates Inc., 28 August 2002, [On-line], Available: <http://www.chaffe-associates.com/pdf/Stock%20Options%208-02.pdf> [accessed: 21/04/2003].
32. Brumberg, B. 2002. *How to make stock options work better and prevent abuses*, The National Center for Employee Ownership (NCEO), August 2002, [On-line], Available: [http://www.nceo.org/library/option\\_better.html](http://www.nceo.org/library/option_better.html) [accessed: 16/04/2003].
33. Business Times. 1999. *Share options ensure the best staff stay*, 7 March 1999, [On-line], Available: <http://www.btimes.co.za/99/0307/survey/survey02.htm> [accessed: 27/4/2003].
34. Bussin, M. & De Beer, B. 2003. *Executive share options: What's behind the hype?*, Accountancy SA, October 2003, pp. 4-5.
35. Bussin, M. & Thomson, D. 2000. *Wealth sharing for all South Africans*, People Dynamics Journal, February 2000, pp. 32-35.
36. Campbell, E.D. 1961. *Stock options should be valued*, Harvard Business Review, July/August 1961, Vol. 39, No. 4, pp. 52-58.
37. Carpenter, J.N. 1998. *The exercise and valuation of executive stock options*, Journal of Financial Economics, 1 May 1998, Vol. 48, No. 2, pp. 127-158.
38. Carpenter, J.N. 2000. *Does option compensation increase managerial risk appetite?*, Journal of Finance, October 2000, Vol. 55, No. 5, pp. 2311-2331.
39. Carter, M.E. & Lynch, J.L. 2003. *The consequences of the FASB's 1998 proposal on accounting for stock option repricing*, Journal of Accounting and Economics, April 2003, Vol. 35, No 1, pp. 51-72.
40. Casey, M. 2002. *Stock options didn't work; what will?* Wall Street Journal, 26 August 2002, [On-line], Available: [http://www.wsjclassroomedition.com/wsjsjtoday/archive/02aug/COVR\\_options.htm](http://www.wsjclassroomedition.com/wsjsjtoday/archive/02aug/COVR_options.htm) [accessed: 07/04/2003].

41. Cavallo, C. 2002. *Accounting for employee shares and options sparks international controversy*, Allens Arthur Robinson, July 2002, [On-line], Available: <http://www.aar.com.au/pubs/pdf/cm/focmjul02.pdf> [accessed: 16/04/2003].
42. Chance, D.M., Kumar, R. & Todd, R.B. 2000. *The 'repricing' of executive stock options*, Journal of Financial Economics, July 2000, Vol. 57, No. 1, pp. 129-154.
43. Choe, C. 2003. *Leverage, volatility and executive stock options*, Journal of Corporate Finance, November 2003, Vol. 9, No. 5, pp. 591-609.
44. Ciccotello, C.S. & Grant, C.T. 1995. *Employee stock option accounting changes*, January 1995, Journal of Accountancy, Vol. 179, No. 1, pp. 72-77.
45. Cilliers, H.S., Benade, M.L., Henning, J.J., Du Plessis, J.J., Delport, P.A., De Koker, L. & Pretorius, J.T. 2000. *Corporate Law*. Third Edition. Durban: LexisNexis Butterworths.
46. Cook, F.W. 2000. *Comment Letter 14 on G4+1 Discussion Paper on accounting for share-based payment*, Frederick W. Cook & Co., Inc, 31 October 2000, [On-line], Available: [http://www.iasb.org.uk/docs/g4sp00/sp\\_cl14.pdf](http://www.iasb.org.uk/docs/g4sp00/sp_cl14.pdf) [accessed: 13/06/2003].
47. Cox, J.C., Ross, S.A. & Rubenstein, M. 1979. *Option pricing: A simplified approach*, Journal of Financial Economics, September 1979, Vol. 7, No. 3, pp. 229-263.
48. Coy, P. 2002. *Go Greenspan's way on stock options*, BusinessWeek Online, 21 October 2002, [On-line], Available: [http://www.businessweek.com/bwdaily/dnflash/apr2002/nf20020412\\_0030.htm](http://www.businessweek.com/bwdaily/dnflash/apr2002/nf20020412_0030.htm) [accessed: 09/06/2003].
49. Crook, K. Senior project manager at the IASB, London. 2003. Correspondence. 14 July 2003, email address: [kcrook@iasb.org.uk](mailto:kcrook@iasb.org.uk).
50. Crystal, G.S. & Foulkes, F.K. 1988. *Don't bail out underwater options*, Fortune, 14 March 1988, Vol. 117, No. 6, pp. 83-84.
51. Cuny, C.J. & Jorion, P. 1995. *Valuing executive stock options with endogenous departure*, Journal of Accounting and Economics, September 1995, Vol. 20, No. 2, [www.manaraa.com](http://www.manaraa.com)

pp. 193-205.

52. Daniel, K. & Titman, S. 1999. *Market efficiency in an irrational world*, Financial Analysts Journal, November/December 1999, Vol. 55, No. 6, pp. 28-40.
53. Dechow, P.M., Hutton, A. P. & Sloan, R.G. 1996. *Economic consequences of accounting for stock-based compensation*, Journal of Accounting Research, 1996 Supplement, Vol. 34, No. 3, pp. 1-20.
54. DeFusco, R.A., Johnson, R.R. & Zorn, T.S. 1990. *The effect of executive stock option plans on stockholders and bondholders*, Journal of Finance, June 1990, Vol. 45, No. 2, pp. 617-627.
55. DeFusco, R.A., Zorn, T.S. & Johnson, R.R. 1991. *The association between executive stock option plan changes and managerial decision making*, Financial management, Spring 1991, Vol. 20, No. 1, pp. 36-43.
56. Derieux, S.A. 1994. *Stock compensation revisited*, Journal of Accountancy, February 1994, Vol. 177, No. 2, pp. 39-41.
57. Dreman, D. 2001. *Inefficient market*, Forbes, 6 August 2001, Vol. 168, No. 3, p. 105.
58. Dybvig, P.H. & Loewenstein, M. 2003. *Employee reload options: Pricing, hedging and optimal exercise*, The Review of Financial Studies, Spring 2003, Vol. 16, No. 1, pp. 145-171.
59. Economist. 2002. *Coming clean on stock options*, 25 April 2002, [On-line], Available: [http://www.economist.com/printedition/displaystory.cfm?story\\_id=1099021](http://www.economist.com/printedition/displaystory.cfm?story_id=1099021) [accessed: 30/03/2003].
60. Employee Ownership Organisation. [S.a.]. *Employee Stakeholding*, [On-line], Available: <http://www.employee-ownership.org.uk/employee.htm> [accessed 20/04/2003].
61. Ernst & Young LLP. 2002. *Accounting for stock compensation*, [On-line], Available: <http://www.fei.org/download/EYInterpretiveGuidance.pdf> [accessed: 07-04-2003].

62. ESOP Association of Canada. 2003. *What is an ESOP?* [On-line], Available: <http://www.esop-canada.com/esop/html> [accessed 20/04/2003].
63. Espahbodi, H., Espahbodi, P., Rezaee, Z. & Tehranian, H. 2002. *Stock price reaction and value relevance of recognition versus disclosure: The case of stock-based compensation*, Journal of Accounting and Economics, August 2002, Vol. 33, No. 3, pp. 343-373.
64. European Employee Stock Options Coalition (EESOC). 2003. *Comment letter 116 on Exposure Draft 2 (ED 2) – Share-based payment*, 7 March 2003, [On-line], Available: <http://www.iasb.org.uk/docs/ed02/ed2-cl116.pdf> [accessed: 21/05/2003].
65. European Union. 2002a. *Employee stock options in the EU and the USA Final Report: United Kingdom*, European Union On-line, August 2002, [On-line], Available: [http://europa.eu.int/comm/enterprise/entrepreneurship/support\\_measures/stock\\_options/uk.pdf](http://europa.eu.int/comm/enterprise/entrepreneurship/support_measures/stock_options/uk.pdf) [accessed: 27/04/2003].
66. European Union. 2002b. *Employee stock options in the EU and the USA Final Report: United States of America*, European Union On-line, August 2002, [On-line], Available: [http://europa.eu.int/comm/enterprise/entrepreneurship/support\\_measures/stock\\_options/usa.pdf](http://europa.eu.int/comm/enterprise/entrepreneurship/support_measures/stock_options/usa.pdf) [accessed: 21/04/2003].
67. Fama, E.F. & Jensen, M.C. 1983. *Agency problems and residual claims*, Journal of Law and Economics, June 1983, Vol. 26, No. 2, pp. 327-349.
68. Fama, E.F. 1970. *Efficient capital markets: A review of theory and empirical work*, Journal of Finance, May 1970, Vol. 25, No. 2, pp. 383-417.
69. Fama, E.F., Fisher, L., Jensen, M.C. & Roll, R. 1969. *The adjustment of stock prices to new information*, International Economic Review, February 1969, Vol. 10, No. 1, pp. 1-21.
70. Ferreira, P. 2003. *Employee share schemes: What's new?* Tax Werks, Werksmans Attorneys, April 2003, Vol. 10, pp. 1-8.

(FIN 28) – *Accounting for Stock Appreciation Rights and Other Variable Stock Option or Award Plans*, Issued December 1978. Norwalk, Connecticut: FASB.

72. Financial Accounting Standards Board (FASB). 1984. *Statement of Financial Accounting Concepts No. 5 (SFAC 5) – Recognition and measurement in financial statements of business enterprises*, Issued December 1984. Norwalk, Connecticut: FASB.
73. Financial Accounting Standards Board (FASB). 1985. *Statement of Financial Accounting Concepts No. 6 (SFAC 6) – Elements of financial statements*, Issued December 1985. Norwalk, Connecticut: FASB.
74. Financial Accounting Standards Board (FASB). 1992. *Statement No. 109 (SFAS 109) – Accounting for income taxes*, Issued February 1992 and revised June 2001. Norwalk, Connecticut: FASB.
75. Financial Accounting Standards Board (FASB). 1993. *FASB Exposure Draft No. E-124 (ED E-124) – Proposed Statement of Financial Accounting Standards: Accounting for stock-based compensation*, Issued 30 June 1993. Norwalk, Connecticut: FASB.
76. Financial Accounting Standards Board (FASB). 1995. *Statement No. 123 (SFAS 123) – Accounting for Stock-Based Compensation*, Issued October 1995 and revised December 2002. Norwalk, Connecticut: FASB.
77. Financial Accounting Standards Board (FASB). 1997. *Statement No. 128 (SFAS 128) – Earnings per share*, Issued February 1997 and revised June 2001. Norwalk, Connecticut: FASB.
78. Financial Accounting Standards Board (FASB). 2000a. *FASB Exposure Draft No. E-159 (ED E-159) – Proposed amendment to FASB Concepts Statement No. 6 to revise the definition of liabilities*, Issued 27 October 2000. Norwalk, Connecticut: FASB.
79. Financial Accounting Standards Board (FASB). 2000b. *FASB Exposure Draft No. E-158 (ED E-158) – Proposed Statement of Financial Accounting Standards: Accounting for financial instruments with characteristics of liabilities, equity, or both*,  
www.manaraa.com

Issued 27 October 2000. Norwalk, Connecticut: FASB.

80. Financial Accounting Standards Board (FASB). 2000c. *FASB Interpretation No. 44 (FIN 44) – Accounting for certain transactions involving stock compensation: An interpretation of APB Opinion No. 25*, Issued March 2000 and revised June 2001. Norwalk, Connecticut: FASB.
81. Financial Accounting Standards Board (FASB). 2002a. *FASB Exposure Draft No. E-168 (ED E-168) – Proposed Statement of Financial Accounting Standards: Accounting for stock-based compensation – transition and disclosure: An amendment of FASB Statement No. 123*, Issued 4 October 2002. Norwalk, Connecticut: FASB.
82. Financial Accounting Standards Board (FASB). 2002b. *FASB's plans regarding the accounting for employee stock options*, [On-line], Available: <http://www.fasb.org/news/nr073102.shtml> [accessed 15/05/2003].
83. Financial Accounting Standards Board (FASB). 2002c. *Statement No. 148 (SFAS 148) – Accounting for stock-based compensation: Transition and disclosure*, Issued December 2002. Norwalk, Connecticut: FASB.
84. Financial Accounting Standards Board (FASB). 2003a. *FASB adds projects to its agenda on employee stock options and pensions*, FASB News Release, 12 March 2003, [On-line], Available: <http://www.fasb.org/news/nr031203.shtml> [accessed: 22/08/2003].
85. Financial Accounting Standards Board (FASB). 2003b. *Statement No. 150 (SFAS 150) – Accounting for certain financial instruments with characteristics of both liabilities and equity*, Issued 15 May 2003. Norwalk, Connecticut: FASB.
86. Findlay, M.C. & Williams, E.E. 2001. *A fresh look at the efficient market hypothesis: How the intellectual history of finance encouraged a real "fraud-on-the-market"*, Journal of Post Keynesian Economics, Winter 2000-2001, Vol. 23, No. 2, pp. 181-199.
87. Foster, T.W., Koogler, P.R. & Vickrey, D. 1991. *Valuation of executive stock option and the FASB proposal*, Accounting Review, July 1991, Vol. 66, No. 3, pp. 595-610.

88. Frazier Research and Analytics (FRA) Investment Education Series. 2002. *The expensing of employee stock options*, 16 July 2002, [On-line], Available: [http://www.frazierresearch.com/FRA%20Educational%20Series/expensing\\_of\\_employee\\_stock\\_options.htm](http://www.frazierresearch.com/FRA%20Educational%20Series/expensing_of_employee_stock_options.htm) [accessed: 30/03/2003].
89. Frederic W. Cook & Co., Inc. 2002. *Forces to overthrow stock option accounting gain strength*, 4 March 2002, [On-line], Available: [http://www.fwcook.com/alert\\_letters/7-30-02UpdateSOAcctingDebate.pdf](http://www.fwcook.com/alert_letters/7-30-02UpdateSOAcctingDebate.pdf) [accessed: 30/03/2003].
90. Frederick W. Cook & Co., Inc. 1998. *Reload stock options: The first ten years*, November 1998, [On-line], Available: <http://www.fwcook.com/rso> [accessed: 25/06/2003].
91. Garner, B.A. 1995. *A dictionary of modern legal usage*. S.v. 'executory contract'. Second Edition. New York: Oxford University Press.
92. Gilson, S.C. & Vestuypens, M.R. 1993. *CEO Compensation in Financially Distressed Firms: An Empirical Analysis*, *Journal of Finance*, June 1993, Vol. 48, No. 2, pp. 425-458
93. Gitman, L.J. 2000. *Principles of managerial finance*. Ninth Edition. Reading, Massachusetts: Addison-Wesley Publishing Co.
94. Gordon, R.N & Lyman, C. [S.a.]. *Hedging basics*, Twenty-first Securities Corporation, [On-line], Available: <http://rtquote.cboe.com/Institutional/hedge.pdf> [accessed: 27/08/2003].
95. Grant, C.T. & Ciccotello, C.S. 2002. *The stock options accounting subterfuge*, *Strategic Finance*, April 2002, Vol. 83, No. 10, pp. 37-41.
96. Greenspan, A. 2002. *Stock options and related matters: Speech by Chairman Alan Greenspan*, The Federal Reserve Board, 3 May 2002, [On-line], Available: <http://www.federalreserve.gov/boarddocs/speeches/2002/20020503> [accessed: 13/06/2003].
97. Griswold, E.N. 1960. *Are stock options getting out of hand?*, *Harvard Business Review*, November-December 1960, Vol. 38, No. 6, pp. 49-55.



98. Hall, B.J. & Murphy, K.J. 2002. *Stock options for undiversified executives*, Journal of Accounting and Economics, February 2002, Vol. 33, No. 1, pp. 3-42.
99. Hanlon, M. & Shevlin, T. 2002. *Accounting for tax benefits of employee stock options and implications for research*, Accounting Horizons, March 2002, Vol. 16, No. 1, pp. 1-16.
100. Harlan, C. 1994. *Accounting proposal stirs unusual uproar in executive suites*, 7 March 1994, Wall Street Journal, Vol. 223, No. 45, pp. A7-A8.
101. Harvard Business Review. 1994. *Taking account of stock options*, Harvard Business Review, January/February 1994, Vol. 72, No. 1, pp. 27-36.
102. Haugen, R.A. & Senbet, L.W. 1981. *Resolving the agency problems of external capital through options*, Journal of Finance, June 1981, Vol. 36, No. 2, pp. 629-647.
103. Havenga, P., Havenga, M., Christianson, M., Garbers, C., Meiring, I., Schulze, W.G., Van der Linde, K. & Van der Merwe, T. 1997. *General principles of commercial law*. Third Edition. Kenwyn: Juta & Co. Ltd.
104. Hemmer, T. 1993. *Risk-free incentive contracts: Eliminating agency costs using option-based compensation schemes*, Journal of Accounting and Economics, October 1993, Vol. 16, No. 4, pp. 447-473.
105. Hemmer, T., Matsunaga, S. & Shevlin, T. 1994. *Estimating the "fair value" of employee stock options with expected early exercise*, Accounting Horizons, December 1994, Vol. 8, No. 4, pp. 23-42.
106. Hemmer, T., Matsunaga, S. & Shevlin, T. 1998. *Optimal Exercise and the Cost of Granting Employee Stock Options with a Reload Provision*, Journal of Accounting Research, Autumn 1998, Vol. 36, No. 2, pp. 231-255.
107. Henderson, M. 2001a. *Lies, damned lies and share options*, Accountancy SA, August 2001, p. 13.
108. Henderson, M. 2001b. *Perform or perish*, Finance week, 15 June 2001, p. 17.

109. Herz, R.H. 2003. *Submission of materials by Robert H. Herz, Chairman of FASB, for the roundtable on "preserving partnership capitalism" through stock options for America's workforce*, 8 May 2003, [On-line], Available: [http://www.fasb.org/full\\_text.pdf](http://www.fasb.org/full_text.pdf) [accessed: 10/06/2003].
110. Holmström, B. 1979. *Moral hazard and observability*, Bell Journal of Economics, Spring 1973, Vol. 10, No. 1, pp. 74-91.
111. Huddart, S. 1994. *Employee stock options*, Journal of Accounting and Economics, September 1994, Vol. 18, No. 2, pp. 207-231.
112. Hull, J. & White, A. 2003. *Accounting for employee stock options*, Unpublished research paper, Joseph L. Rotman School of Management, University of Toronto, January 2003, [On-line], Available: <http://www.rotman.utoronto.ca/~hull/downloadablepublications/AccountingforStockOptions.pdf> [accessed: 19/06/2003].
113. Hull, J.C. 2002. *Fundamentals of futures and options markets*. Fourth Edition. Upper Saddle River, New Jersey: Prentice Hall.
114. International Accounting Standards Board (IASB). 2002a. *Exposure Draft 2 (ED 2) - Draft basis for conclusions on Exposure Draft ED 2 Share-based payment*, Issued 7 November 2002, [On-line], Available: <http://www.iasb.org.uk/docs/ed02/ed02-bc.pdf> [accessed: 21/03/2003].
115. International Accounting Standards Board (IASB). 2002b. *Exposure Draft 2 (ED 2) – Draft implementation guidance on Exposure Draft ED 2 Share-based payment*, Issued 7 November 2002, [On-line], Available: <http://www.iasb.org.uk/docs/ed02/ed02-ig.pdf> [accessed: 21/03/2003].
116. International Accounting Standards Board (IASB). 2002c. *Exposure Draft (ED IAS 32/39) – Exposure Draft of proposed amendments to IAS 32 Financial instruments: Disclosure and presentation and IAS 39 Financial instruments: Recognition and measurement*, Issued 20 June 2002, [On-line], Available: [http://www.iasb.org.uk/docs/ias32-39/02-32\\_39-ed.pdf](http://www.iasb.org.uk/docs/ias32-39/02-32_39-ed.pdf) [accessed: 02/07/2003].

- Share-based payment*, Issued 7 November 2002, [On-line], Available: <http://www.iasb.org.uk/docs/ed02/ed02.pdf> [accessed: 21/03/2003].
118. International Accounting Standards Board (IASB). 2003. *Project background: Accounting for Share-based payment*, 30 September 2003, [On-line], Available: <http://www.iasb.org.uk/docs/projects/sbp-ps.pdf> [accessed: 15/10/2003].
119. International Accounting Standards Committee (IASC). 1989. *IASB Framework – Framework for the preparation and presentation of financial statements*, Issued July 1989. London: IASC.
120. International Accounting Standards Committee (IASC). 1993. *IAS 22 – Business combinations*, Issued December 1993 and revised July 1998. London: IASC.
121. International Accounting Standards Committee (IASC). 1995. *IAS 32 – Financial Instruments: Disclosure and presentation*, Issued March 1995 and revised October 2000. London: IASC.
122. International Accounting Standards Committee (IASC). 1996. *IAS 12 – Income taxes*, Issued October 1996 and revised January 2001. London: IASC.
123. International Accounting Standards Committee (IASC). 1997. *IAS 33 – Earnings per share*, Issued February 1997 and revised March 1999. London: IASC.
124. International Accounting Standards Committee (IASC). 1998a. *IAS 38 – Intangible assets*, Issued July 1998 and revised December 1998. London: IASC.
125. International Accounting Standards Committee (IASC). 1998b. *IAS 19 – Employee benefits*, Issued February 1998 and revised May 2002. London: IASC.
126. International Accounting Standards Committee (IASC). 1999. *IAS 16 – Property, plant and equipment*, Issued July 1999 and revised January 2001. London: IASC.
127. International Accounting Standards Committee (IASC). 2000. *G4+1 Position Paper – Accounting for share-based payment*, Issued July 2000, [On-line], Available: <http://www.iasb.org.uk/docs/g4sp00/g4sp00.pdf> [accessed: 01/04/2003].

*FASB's call for quarterly disclosure of employee stock options*, 7 October 2002, [On-line], Available:

<http://www.fei.org/advocacy/download/FASBQuote.pdf#xml=http://fei.org.master.com/tehis/master/search/mysite.txt?q=Expensing+stock+options&order=r&id=28494200c540250&cmd=xml> [accessed: 21/05/2003].

129. International Financial Reporting Interpretations Committee (IFRIC). 1998. *Standing Interpretations Committee No. 16 (SIC 16) – Share capital: Reacquired own equity instruments (treasury shares)*, June 1998. London: IASC.
130. Ittner, C.D., Lambert, R.A. & Larcker, D.F. 2003. *The structure and performance consequences of equity grants to employees of new economy firms*, Journal of Accounting and Economics, January 2003, Vol. 34, No. 1-3, pp. 89-127.
131. Jansen and Galvin Group. 2003. *Article 1: The “collar strategy”*, [On-line], Available: <http://ptisecurities.com/JansenGalvinGroup.htm> [accessed: 09/09/2003].
132. Jennergren, L.P. & Näslund, B. 1993. *A comment on “valuation of executive stock options and the FASB proposal”*, Accounting Review, January 1993, Vol. 68. No. 1, pp. 179-183.
133. Jensen, M.C. & Meckling, W.H. 1976. *The theory of the firm: Managerial behavior, agency costs and ownership structure*, Journal of Financial Economics, October 1976, Vol. 3, No. 4, pp. 305-360.
134. Jensen, M.C. & Murphy, K.J. 1990a. *CEO Incentives: It's not how much you pay, but how*, Harvard Business Review, May/June 1990, Vol. 68, No. 3, pp. 138-153.
135. Jensen, M.C. & Murphy, K.J. 1990b. *Performance pay and top management*, Journal of Political Economy, April 1990, Vol. 98, No. 2, pp. 225-264.
136. Johanson, B. 1999. *Employee stock options and related equity incentives*, The National Center for Employee Ownership (NCEO), October 1999, [On-line], Available: <http://www.nceo.org/library/equity.html> [accessed: 16/04/2003].
137. Johnson, S.A. & Tian, Y.S. 2000. *Indexed executive stock options*, Journal of Financial Economics, July 2000, Vol. 57, No. 1, pp. 35-64.

138. Journal of Accountancy. 1993. *Legislation introduced to overturn FASB stock option proposal*, Journal of Accountancy, October 1993, Vol. 176, No. 4, pp. 15-16.
139. Journal of Accountancy. 1994a. *Stock compensation: AICPA opposes standard-setting legislation*, Journal of Accountancy, January 1994, Vol. 177, No. 1, p. 19.
140. Journal of Accountancy. 1994b. *Stock compensation: FASB testimony responds to critics*, Journal of Accountancy, January 1994, Vol. 177, No. 1, p. 20.
141. Kamlet, A., Morris, B., Lott, C. & Kim, L. 1999. *Derivatives: Stock option basics*, The investment FAQ, 26 May 1999, [On-line], Available: <http://investfaq.com/articles/deriv-option-basic.html> [accessed: 15/04/2003].
142. Katsanis, M.S. & Brown, V. [S.a.]. *Valuing employee stock options*, Chaffe and Associates Inc., [On-line], Available: <http://www.chaffeassociates.com/pdf/Valuing%20Stock%20Options.pdf> [accessed: 21/04/2003].
143. Katsanis, M.S. 2001. *A new pricing model for valuing employee stock options*, Journal of Employee Ownership, Law and Finance, Summer 2001, Vol. 13, No. 3, [On-line], Available: [http://www.valrexmodel.com/journal\\_full.pdf](http://www.valrexmodel.com/journal_full.pdf) [accessed: 21/05/2003].
144. Katsanis, M.S. 2002. *The Valrex model for valuing employee stock options*, The CPA Journal – Personal financial planning, February 2002, [On-line], Available: <http://www.nysscpa.org/cpajournal/2002/0202/dept/Dept.202pg.70b.htm> [accessed: 21/05/2003].
145. Kaub, M., Zhang, Q., Lopati, I., Dutchak, V. & Eyzerman, I. 2002. *Stock option accounting: As easy as 123?*, Supervisor M. Oenema, International Business School, 30 October 2002, [On-line], Available [http://www.kaub.de/pdf\\_files/Report%20Stock%20Options\\_Hanze.pdf](http://www.kaub.de/pdf_files/Report%20Stock%20Options_Hanze.pdf) [accessed: 27/03/2003].
146. Kemp, S. 2002a. *Corporates go cold on share options*, CFO web, 5 June 2002, [On-line], Available:

<http://m1.mny.co.za/C2256B5E0043AC17/0/C2256B5E0043AC1742256BCF00443064?Open&Highlight=2,options> [accessed: 06/05/2003].

147. Kemp, S. 2002b. *New share option accounting will reduce earnings*, CFO web, 11 November 2002, [On-line], Available: <http://m1.mny.co.za/C2256B5E0046444A/0/C2256B5E0046444A42256C6E003A947A?Open&Highlight=2,options> [accessed: 06/05/2003].
148. King Committee on Corporate Governance. 2002. *King report on corporate governance for South Africa 2002*, March 2002. Johannesburg: Institute of Directors in Southern Africa. Chairman: M. King.
149. Kirschenheiter, M., Mathur, R. & Thomas, J. 2002. *Entity accounting and dilution: The case of stock options*, Unpublished research paper, Columbia Business School, November 2002, [On-line], Available: <http://www.columbia.edu/~mtk4/research/OptionThy112502.PDF> [accessed: 19/06/2003].
150. Kirschenheiter, M., Mathur, R. & Thomas, J. 2003. *Accounting for employee stock options*, Unpublished research paper, Columbia Business School, May 2003.
151. KPMG International. 2003. *Comment letter 191 on Exposure Draft of share-based payment*, 7 March 2003, [On-line], Available: <http://www.iasb.org.uk/docs/ed02/ed2-cl91.pdf> [accessed: 18/08/2003]
152. Kruger, P. 2002. *Share options are backfiring*, PricewaterhouseCoopers South Africa, 4 June 2002, [On-line], Available: <http://www.pwcglobal.com/servlet/printFormat?url=http://www.pwcglobal.com/Extweb/ncpressrelease.nsf/docid/A07910CBFA636F3580256BC90061EC9B> [accessed: 20/04/2003].
153. Kulatilaka, N. & Marcus, A.J. 1994. *Valuing employee stock options*, Financial Analysts Journal, November/December 1994, Vol. 50, No. 6.
154. Lambert, R.A., Larcker, D.F. & Verrecchia, R.E. 1991. *Portfolio considerations in valuing executive compensation*, Journal of Accounting Research, Spring 1991, Vol. 29, No. 1, pp. 129-149.

155. Lavelle, L. & Jespersen, F.J. 2002. *Executive Pay: Special report*, Business Week – European Edition, 15 April 2002, No. 3762-1092, pp. 64-70.
156. Levinson, M. 1999. *Guide to financial markets – The Economist books*. London: Profile Books Ltd.
157. Lintner, J. 1965. *The valuation of risk assets and the selection of risky investments in stock portfolios and capital budgets*, Review of Economics & Statistics, February 1965, Vol. 47, No. 1, pp. 13-37.
158. Livingston, P. 2002. *Employees caught in the middle of stock option debate*, Financial Executives International: The world of corporate finance, 2 May 2002, [On-line], Available: [http://www.fei.org/news/PL\\_stock\\_options.cfm](http://www.fei.org/news/PL_stock_options.cfm) [accessed: 21/05/2003].
159. London International Financial Futures Exchange (LIFFE). [S.a.]a. *Administration and Management: All about options, what is an option?*, [On-line], Available: <http://www.liffe.com/liffeinvestor/introduction/how/options/index.htm> [accessed: 22/04/2003].
160. London International Financial Futures Stock Exchange (LIFFE). [S.a.]b. *Option strategies: Basic option theories*, [On-line], Available: <http://www.liffe.com/products/strategies/theory.htm> [accessed: 01/10/2003].
161. Ludolph, S. Project director – Technical unit at the SAICA, Johannesburg. 2003. Correspondence. 20 May 2003, email address: [suel@saica.co.za](mailto:suel@saica.co.za).
162. Macbeth, J.D. & Merville, L.J. 1979. *An empirical examination of the Black-Scholes call option pricing model*, Journal of Finance, December 1979, Vol. 34, No. 5, pp. 1173-1186.
163. Macbeth, J.D. & Merville, L.J. 1980. *Tests of the Black-Scholes and Cox call option valuation models*, Journal of Finance, May 1980, Vol. 35, No. 2, pp. 285-301.
164. Malkiel, B.G. & Baumol, W.J. 2002. *Stock options keep the economy afloat*, Wall Street Journal, 4 April 2002, Vol. 239, No. 66. New York: Dow Jones & Company. p.

165. Maller, R.A., Tan, R. & Van de Vyver, M. 2002. *How might companies value ESOs?*, Australian Accounting Review, Vol. 12, No. 1, 2002, pp. 11-24.
166. Manitou Investment Management Ltd. 1999. *The amazing stock option bubble*, October 1999, [On-line], Available: <http://www.equassist.com/stockoptionbubblesep99.pdf> [accessed: 16/06/2003].
167. Marais, S. 2003. *Interview with Alec Hogg*, 14 May 2003, [On-line], Available: <http://m1.mny.co.za/BusToday.nsf/UNID/BVRN-5MJQXP> [accessed: 15/05/2003].
168. Margo Commission Report. 1987. *Commission of inquiry into the tax structures of the Republic of South Africa (Margo Commission): Summary of important recommendations*. Johannesburg: KPMG Aiken & Peat. Chairman: C.S. Margo.
169. Matisonn, M. 1999. *The accounting treatment for employee share options: A South African perspective*, MCom. dissertation. University of the Witwatersrand, Johannesburg.
170. Mauboussin, M.J. & Bartholdson, K. 2002. *The last word (we wish) on employee stock options*, Credit Suisse First Boston, 5 June 2002, [On-line], Available: <http://www.beaconinvest.com/.Articles/Empl%20Stock%20Options.pdf> [accessed: 01/04/2003].
171. Maxim Integrated Products Inc. 2002. *Maxim's views on accounting for employee stock options – August 2002*, 12 August 2002, [On-line], Available: <http://pdfserv.maxim-ic.com/arpdf/optionsacctg.pdf> [accessed: 21-04-2003].
172. McCombs School of Business, [S.a.]. *The Black and Scholes Model: An application to real options*, University of Texas, [On-line], Available: <http://www.bus.utexas.edu/courses/MIS383N/Black%20and%20Scholes%20Model.pdf> [accessed: 07/04/2003].
173. McGraw, J. 2002. *Market leery of stock options accounting*, Memphis Business Journal, 12 July 2002, [On-line], Available: <http://dayton.bizjournals.com/memphis/stories/2002/07/15/focus4.html> [accessed: 30/03/2003].



174. McManus, S. Director of Renwick Reward, Johannesburg. 2003. Correspondence. 6 May 2003, email address: [Steven.McManus@renwickreward.co.za](mailto:Steven.McManus@renwickreward.co.za).
175. Merritt, R.S. & Borders, B.T. 2000. *Comment Letter 10 on G4+1 Discussion paper on accounting for share-based payment*, Association of Publicly Traded Companies (APTC), 31 October 2000, [On-line], Available: [http://www.iasb.org.uk/docs/g4sp00/sp\\_cl10.pdf](http://www.iasb.org.uk/docs/g4sp00/sp_cl10.pdf) [accessed: 13/06/2003].
176. Merton, R.C. 1973. *Theory of rational option pricing*, Bell Journal of Economics and Management Science, Spring 1973, Vol. 4, No. 1, pp. 141-183.
177. Michel, N.J. & Garwood, P. 2002. *Expensing employee stock options: Lifting the fog*, The Heritage Center for Data Analysis, 21 October 2002, [On-line], Available: <http://www.heritage.org/Research/Regulation/loader.cfm?url=/commonspot/security/getfile.cfm&PageID=31020> [accessed: 09/06/2003].
178. Mohr, P. & Fourie, L. 1995. *Economics for South African students*. First Edition. Pretoria: J.L. van Schaik Publishers.
179. Moreland, J. 2002. *Fully deluded when it comes to expensing incentive options*, Financial Executives International (FEI): The world of corporate finance, 16 December 2002, [On-line], Available: <http://www.fei.org/news/moreland.cfm> [accessed: 21/05/2003].
180. Morgenson, G. 1998. *Stock options are not a free lunch*, Forbes, 18 May 1998, Vol. 161, No. 10, pp. 212-217.
181. Morrissey, M. 2000. *Background report: Employee stock options*, Financial Market Center, April 2000, [On-line], Available: <http://www.fmcenter.org/pdf/BRapril2000R3b.pdf> [accessed 27/03/2003].
182. Mozes, H.A. 1998. *The FASB's conceptual framework and political support: The lesson from employee stock options*, ABACUS, September 1998, Vol. 34, No. 2, pp. 141-162.
183. MyOptionValue.com. [S.a.]a. *Incentive Stock Options (ISOs)*, [On-line], Available:

- <http://www.myoptionvalue.com/movschool/FAQ/ISOs/index.html> [accessed: 04/05/2003].
184. MyOptionValue.com. [S.a.]b. *Nonqualified Stock Options (NQSOs)*, [On-line], Available: <http://www.myoptionvalue.com/movschool/FAQ/NSOs/index.html> [accessed: 04/05/2003].
185. MyOptionValue.com. [S.a.]c. *Stock option basics*, [On-line], Available: <http://www.myoptionvalue.com/movschool/FAQ/StockOptionBasics/index.html> [accessed: 02/05/2003].
186. Nadel, A.A., Haines, T.M. & Kopp, G.M. 2003. *Accounting for equity compensation*, March 2003. Oakland, California: The National Center for Employee Ownership (NCEO).
187. National Center for Employee Ownership (NCEO). 2002a. *A statistical profile of employee ownership*, April 2002, [On-line], Available: [http://www.nceo.org/library/eo\\_stat.html](http://www.nceo.org/library/eo_stat.html) [accessed: 27/04/2003].
188. National Center for Employee Ownership (NCEO). 2002b. *Employee stock options fact sheet*, [On-line], Available: <http://www.nceo.org/library/optionfact.html> [accessed: 16/04/2003].
189. National Center for Employee Ownership (NCEO). 2002c. *How to choose an employee stock plan for your company*, [On-line], Available: [http://www.nceo.org/library/how\\_to\\_choose.html](http://www.nceo.org/library/how_to_choose.html) [accessed 16/04/2003].
190. National Center for Employee Ownership (NCEO). 2003. *Welcome to the NCEO*, [On-line], Available: <http://www.nceo.org> [accessed: 29/04/2003].
191. Noreen, E. & Wolfson, M. 1981. *Equilibrium option pricing models and accounting for executive stock options*, Journal of Accounting Research, Autumn 1981, Vol. 19, No. 2, pp. 384-398.
192. Nysetvold, T. & Clark, M.J.A. 2000. *G4+1 Special Report: Accounting for share-based payment*, Global Financial Reporting Advocacy Committee (GFRAC) and Association for Investment Management and Research (AIMR), 31 October 2000, [www.manaraa.com](http://www.manaraa.com)

- [On-line], Available: <http://www.aimr.com/advocacy/00commltr/00sharebased.html> [accessed: 30/03/2003]
193. Ormiston, K.R. 1990. *Implementing employee stock ownership schemes*. MBA thesis, University of the Witwatersrand, Johannesburg.
194. PricewaterhouseCoopers. [S.a.]. *Share-based incentive solutions*, [On-line], Available: <http://www.pwcglobal.com/extweb/service.nsf/docid/C2F806413A8D31BA802569C900397CBD> [accessed 20/04/2003].
195. Priest, A. 2002. *Accounting for employee share options may reduce profits says Deloitte*, Accounting Education.com, 5 December 2002, [On-line], Available: <http://www.accountingeducation.com/news/news3561.html> [accessed: 27/03/2003].
196. Queens University of Belfast. [S.a.]. *Brownian Motion*, [On-line], Available: <http://web.am.qub.ac.uk/users/m.s.kim/chap4.pdf> [accessed: 28/08/2003].
197. Rajgopal, S. & Shevlin, T. 2002. *Empirical evidence on the relation between stock option compensation and risk taking*, Journal of Accounting and Economics, June 2002, Vol. 33, No. 2, pp. 145-171.
198. Reingold, J. 1999. *Slimmer rewards for a job poorly done*, Business Week – European Edition, 15 February 1999, p. 56.
199. Reingold, J., Mecher, R.A. & McWilliams, G. 1998. *Executive pay: Stock options plus a bull market make a mockery of many attempts to link pay to performance*, Business Week – European Edition, 20 April 1998, pp. 56-60.
200. Renninger, M. 2000. *Stock option fundamentals: Know your goals and terms: Part 1*, Mystockoptions.com, [On-line], Available: <http://www.mystockoptions.com/Articles/index.cfm/ObjectID/6BD862F8-14CD-11D4-B9050008C79F9E62> [accessed: 01/05/2003].
201. Rodgers, L. 2003. *Ownership and motivation: What does ownership mean to employees?*, The National Center for Employee Ownership (NCEO), February 2003, [On-line], Available: <http://www.nceo.org/columns/oa7.html> [accessed: 16/04/2003].

202. Rosen, C. 2002a. *Is stock expensing inevitable? And what can you do about it?*, The National Center for Employee Ownership (NCEO), August 2002, [On-line], Available: [http://www.nceo.org/library/option\\_expensing.html](http://www.nceo.org/library/option_expensing.html) [accessed: 16-04-2003].
203. Rosen, C. 2002b. *Five common myths about stock options*, The National Center for Employee Ownership (NCEO), February 2002, [On-line], Available: [http://www.nceo.org/library/option\\_myths.html](http://www.nceo.org/library/option_myths.html) [accessed: 16/04/2003].
204. Rosen, C. 2002c. *Reforming stock options in the post-Enron, post-WorldCom Era*, The National Center for Employee Ownership (NCEO), July 2002, [On-line], Available: [http://www.nceo.org/library/reforming\\_stock\\_options.html](http://www.nceo.org/library/reforming_stock_options.html) [accessed: 30/03/2003].
205. Rosen, C. 2002d. *Stock options: who gets what?* The National Center for Employee Ownership (NCEO), July 2002, [On-line], Available: [http://www.nceo.org/library/option\\_distribution.html](http://www.nceo.org/library/option_distribution.html) [accessed: 16/04/2003].
206. Ross, S.A.R., Westerfield, R.W., Jordan, B.D. & Firer, C. 2001. *Fundamentals of corporate finance*. Second South African edition. New York: Irwin McGraw Hill.
207. Rouse, R.W. & Barton, D.N. 1993. *Stock compensation accounting*, Journal of Accountancy, June 1993, Vol. 175, No. 6, pp. 67-70.
208. Rubash, K. 2001. *Derivatives: Black-Scholes option pricing model*, The Investment FAQ, 5 Jan 2001, [On-line], Available: <http://invest-faq.com/articles/deriv-black-scholes.html> [accessed: 15/04/2003].
209. Rubenstein, M. 1994. *On the accounting valuation of employee stock options*, Unpublished research paper, University of California, Berkeley, 30 November 1994, [On-line], Available: <http://www.haas.berkeley.edu/finance/WP/rpf241.pdf> [accessed: 30/03/2003].
210. Rubenstein, M. 2001. *Rational markets: Yes or no? The affirmative case*, Financial Analysts Journal, May/June 2001, Vol. 57, No. 3, pp. 15-29.

211. Saly, P.J, Jagannathan, R. & Huddart, S.J. 1999. *Valuing the reload features of executive stock options*, Accounting Horizons, September 1999, Vol. 13, No. 3, pp. 219-240.
212. Saly, P.J. 1994. *Repricing executive stock options in a down market*, Journal of Accounting and Economics, November 1994, Vol. 18, No. 3, pp. 325-356.
213. Sharpe, W.F. 1964. *Capital asset prices: A theory of market equilibrium under conditions of risk*, Journal of Finance, September 1964, Vol. 19, No. 3, pp. 425-442
214. Sinnett, W.M. 2003. *Yes, employee stock options can be valued*, Financial Executive, March/April 2003, Vol. 19, No. 2, pp. 52-55.
215. Smith, C.W. & Zimmerman, J.L. 1976. *Valuing employee stock option plans using option pricing models*, Journal of Accounting Research, Autumn 1976, Vol. 14, No. 2, pp. 357-364.
216. Smith, C.W. 1976. *Option pricing: A review*, Journal of Financial Economics, January-March 1976, Vol. 3, No. 1-2, pp. 3-51.
217. Soffer, L.C. 2000. *SFAS 123: Disclosure and discounted cash flow valuation*, Accounting Horizons, June 2000, Vol. 14, No 2, pp. 169-189.
218. South Africa. 1962. *Income Tax Act, no. 58, 1962 (as amended)*. Pretoria: Government Printer.
219. South Africa. 1973. *Companies Act, no. 61, 1973 (as amended)*. Pretoria: Government Printer.
220. South African Institute of Chartered Accountants (SAICA). 1992. *AC 104 – Earnings and dividends per share*, Issued January 1992 and withdrawn October 1998. Kengray, Johannesburg: SAICA.
221. South African Institute of Chartered Accountants (SAICA). 1998. *AC 104 – Earnings per share*, Issued October 1998. Kengray, Johannesburg: SAICA.

222. South African Institute of Chartered Accountants (SAICA). 2000. *AC 116 – Employee benefits*, Issued February 2000 and revised September 2002. Kengray, Johannesburg: SAICA.
223. Standing Committee on Employment, Education and Workplace Relations in Australia. 2000. *Appendix F: Employee share plans in other countries*, October 2000, [On-line], Available: <http://www.aph.gov.au/house/committee/edt/eso/Report/appendixf.pdf> [accessed: 20/04/2003].
224. Stein, C. 1999. *Employee share incentive schemes: A summary of the various forms and their tax consequences*, Werksmans Attorneys, 9 December 1999, [On-line], Available: <http://www.mbendi.co.za/werksmans/wklaw03.htm> [accessed: 20/04/2003].
225. Stiglitz, J. 2002. *Accounting for options*, Wall Street Journal, 3 May 2002, [On-line], Available: [http://www.wsjclassroomedition.com/wsjtoday/archive/02may/COVR\\_options3.htm](http://www.wsjclassroomedition.com/wsjtoday/archive/02may/COVR_options3.htm) [accessed: 07/04/2003].
226. Thomas, C.W. 2002. *The Rise and Fall of Enron*, Journal of Accountancy, April 2002, Vol. 193, No. 4, pp. 41-48.
227. Thompson, D.H. 2002. *Stock option accounting an expense?*, CPAmerica International, 28 May 2002, [On-line], Available: <http://www.afai.com/profession/justthink/2002-05-28c.asp> [accessed: 01/04/2003].
228. Towers Perrin. 2001. *Stock options around the world*, [On-line], Available: <http://www.fed.org/resrclib/Articles/WWSO2001FINAL.pdf> [accessed: 4/05/2003].
229. Towers Perrin. 2002. *The future of stock option accounting in the U.S.*, May 2002, [On-line], Available [http://www.towers.com/towers\\_publications/publications/monitor\\_update/mup0205.htm](http://www.towers.com/towers_publications/publications/monitor_update/mup0205.htm) [accessed: 01/04/2003].
230. Tully, S. 1998. *Raising the bar*, Fortune, 8 June 1998, Vol. 137, No. 11, pp. 134-137.

- 2002, Business Week – European Edition, No. 3764-1094, p. 14.
232. United States of America. 1986. *Internal revenue code (as amended)*, [On-line], Available: <http://www.fourmilab.ch/ustax/www/t26-A-1-B-II-83.html> [accessed: 25/07/2003].
233. Vaknin, S. 2002. *Employee benefits and ownership*, Buzzle.com, 25 October 2002, [On-line], Available: <http://www.buzzle.com/editorials/text10-23-2002-28734.asp> [accessed: 04/05/2003].
234. Van der Kooy, R. 2001. *The way the world of work is moving*, Finance week, 28 September 2001 pp. 74-75.
235. Van der Merwe, M.J. 1996. *Accounting for goodwill: A critical evaluation*, MCompt dissertation, University of South Africa, Pretoria.
236. Varian, H.R. 2002. *In accounting for options, knowing about diluted earnings is a powerful tool*, 9 May 2002, The New York Times, p. C2.
237. Vorster, Q., Koen, M., Koornhof, C., Oberholster, J.G.I. & Koppeschaar, Z.R. 2002. *Descriptive Accounting*. Seventh Edition. Durban: LexisNexis Butterworths.
238. Wall Street Journal. 2002. *Weighing the options on options*, September 2002, [On-line], Available: [http://www.wsjclassroomedition.com/wsjtoday/archive/02sep/account\\_options1.htm](http://www.wsjclassroomedition.com/wsjtoday/archive/02sep/account_options1.htm) [accessed: 07/04/2003].
239. Web-Surveys.Net. [S.a.]. *Glossary of term: GEC benchmark and trends survey*, [On-line], Available: <http://www.websurveys.net/globalequity/glossary.asp> [accessed: 04/05/2003].
240. Weygandt, J.J. 1977. *Valuation of stock option contracts*, Accounting Review, January 1977, Vol. 52. No. 1, pp. 40-51.
241. White, G.I., Sondhi, A.C. & Fried, D. 2003. *The analysis and use of financial statements*. Third edition. Hoboken, New Jersey: John Wiley & Sons, Inc.
242. Williams, L. & Dreyer, R. 2003. *Proposals for share based payments [ED 160]*, [www.manaraa.com](http://www.manaraa.com)

Accountancy SA, February 2003, pp. 16-18.

243. World News. 2002. *Expensing employee stock options "inappropriate, unwise and unnecessary"*, 22 November 2002, [On-line], Available: <http://www.masb.org.my/worldnewsview.asp?id=81> [accessed: 30/03/2003].
244. Yermack, D. 1995. *Do corporations award CEO stock options effectively?*, Journal of Financial Economics, October-November 1995, Vol. 39, No. 2-3, pp. 237-269.
245. Young, C.K. 1993. *What's the right Black-Scholes value?*, Financial Executive, September/October 1993, Vol. 9, No. 5, pp. 57-59.